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DIESEL RAILWAY TRACTION SUPPLEMENT

The November issue of THE RAILWAY GAZETTE *Supplement, illustrating and describing developments in Diesel Railway Traction, will be ready on November* 1, *price* 1*s.*

TO CALLERS AND TELEPHONERS

Until further notice our office hours are: Mondays to Fridays 9.30 *a.m. till* 5.30 *p.m.*
The office is closed on Saturdays

ANSWERS TO ENQUIRIES

By reason of staff shortage due to enlistment, we regret that it is no longer possible for us to answer enquiries involving research, or to supply dates when articles appeared in back numbers, either by telephone or by letter

ERRORS, PAPER, AND PRINTING

Owing to shortage of staff and altered printing arrangements due to the war, and less time available for proof reading, we ask our readers' indulgence for typographical and other errors they may observe from time to time, also for poorer paper and printing compared with pre-war standards

"Read Wherever There are Railways"

FOR 35 years the slogan of *The Railway Gazette* "Read Wherever there are Railways," has been familiar to railwaymen throughout the world, as our unrivalled subscription list contains railway administrations in every continent and country, regardless of language, and fully justifies the assertion of the slogan. Twice, however, world wars have caused us to suspend its use. A purist or pernickity person might have argued that the phrase "Read Wherever there are Railways" could be taken as implying that we were trading with the enemy. As a matter of fact we think that throughout the war our paper did reach railway authorities in Germany and other enemy countries through agents in neutral territories, which justified all the censorship restrictions. Similarly, we, under license from the Board of Trade, secured through neutral countries German and Italian technical publications. After six years, we now have no qualms in resuming our slogan as an occasional "top line" for our cover, and this seems to justify the foregoing remarks. As exemplifying the fact that language and form of alphabet are no insuperable bar to the quest for technical information, we recall, as one of the incidents of the late war, a telegram from the Soviet Government to send the weekly supply of copies of *The Railway Gazette* to Kuibyshev when it appeared that Moscow might fall.

* * * *

Railway Dividends Since Grouping

Despite the emphasis which has been laid on the fact that the Bank of England Bill should not be taken as an indication of the Government's general policy for the nationalisation of industrial undertakings, it has stimulated a good deal of conjecture as to any further projects of the kind that the Government may have in view. In *The Financial Times* it is stated that the publication of the Bill has led to dealers in home railway stocks receiving a number of inquiries as to the likely terms of any such measure in the case of the railways. A Stock Exchange jobber has tabulated the average dividends on home railway variable dividend stocks for the last 22 years—that is, since the grouping of the railways became effective—and has compared them with payments on stocks under the Government control agreement. This table is given below:—

Stock	Average dividends 1923-44 Per cent.	Dividends under Government rental Per cent.
G.W.R. ordinary	4·45	4·5
L.M.S.R. ordinary	2·42	2·5
" 1923 preference	3·34	4·0
" 1st preference	3·93	4·0
" 1955 preference	4·90	5·0
L.N.E.R. deferred	0·27	Nil
" preferred	0·86	Nil
" 2nd preference	2·20	2·75
" 1955 preference	4·34	5·0
" 1st preference	3·52	4·0
Southern deferred	1·43	2·0
" preferred	4·63	5·0

For what it is worth, the table is interesting as showing how close the average dividends for 22 years are to current payments, but it might be unwise to attach too much significance to this.

* * * *

Locomotive Export Trade

The demand for motive power from many parts of the world at the present time makes it impossible for British locomotive manufacturers to fulfil all demands which are made on them. Nevertheless, every endeavour is being made to maintain contacts abroad, and in many cases where it is found that it is not possible to complete and ship locomotives, spares have been supplied which have enabled engines to be kept running. The arrangements for the call-up of young engineers who previously have been deferred, may interfere with this practice, which has been of considerable assistance to overseas railway administrations. The efforts which the British locomotive building industry has made during the war may be judged from the fact that it has produced some 2,100 main-line locomotives of some 43 different types, as well as some 440 industrial locomotives. This total of 2,500 engines has been sent to many parts of the world. It is the more remarkable when it is remembered that most of the works virtually were closed for locomotive production for the first two or three years of the war. It bears more than favourable comparison with American locomotive production performance, for in the United States long runs of output were possible with relatively few designs.

* * * *

Southern Railway Ostend Service Restored

The reopening of the Dover-Ostend boat service this week and the naming on Monday evening of the latest "Merchant Navy" class engine *Belgian Marine* forged another link in the long chain of association between the Belgian Government and the Southern Railway, which has lasted for nearly 100 years; the centenary of the establishment of the steamer service between Ostend and Dover falls due next year. The unveiling ceremony and the informal dinner which followed at the May Fair Hotel

gave Colonel Eric Gore Browne, Sir Eustace Missenden, M. Rongvaux, Belgian Minister of Communications, M. Henning, M. de Vos and other Belgian visitors an opportunity of exchanging, in a very pleasant way, opinions on the task which lay ahead to reinstate and further to stimulate and encourage travel between the two countries and beyond—for the Dover-Ostend sea route is an important part of a great international highway. During the talks at the dinner it was made clear by the Chairman of the Southern Railway that much remained to be done to remove the restrictions on Continental travel. This association of a "Merchant Navy" class locomotive with a cross-Channel route emphasises the international nature of our railway services. Already some "Merchant Navy" class locomotives have been named after the great overseas shipping administrations and soon a similar compliment will be paid to Holland. Let us hope that, in the near future, continental travel will be so stimulated that there will be an opportunity of naming other locomotives *French Marine*, *Russian Marine*, and so on.

* * * *

Overseas Railway Traffics

Riots in Buenos Ayres following on the release of Colonel Peron and possibilities of further disturbance caused a marking-down of the prices of Argentine railway stocks although the actual amount of selling was small. Debenture issues were affected rather more than ordinaries and preferences. Traffic receipts of Argentine railways in the 14th and 15th weeks have shown moderate increases in most instances, with a striking gain of £43,653 on the Central Argentine. The Buenos Ayres & Pacific shows an advance of £8,438, the Buenos Ayres Great Southern a net gain of £7,749, and on the Buenos Ayres Western there is no change as the loss in one week is balanced by the gain in the other. For the Argentine North Eastern and the Entre Rios the respective increases are £3,799 and £3,582.

	No. of week	Weekly traffics	Inc. or dec.	Aggregate traffic	Inc. or dec.
		£	£	£	£
Buenos Ayres & Pacific* ...	15th	130,937	+ 4,063	1,860,875	+ 71,125
Buenos Ayres Great Southern*	15th	168,562	— 6,438	2,909,625	+350,562
Buenos Ayres Western* ...	15th	70,000	+ 4,437	1,054,875	+ 68,562
Central Argentine*	15th	193,219	+26,478	2,868,225	+174,613
Canadian Pacific	41st	1,200,000	—27,800	49,769,000	—248,400

* Pesos converted at 16 to £

Nitrate Railways for the fortnight ended October 15 show an increase of £2,967, making an aggregate of £146,086 which is an improvement of £4,744 on the 41 weeks of 1944.

* * * *

Restoration of the Mont Cenis Route

One of the most serious acts of destruction carried out by the Germans as they retreated from south-eastern France was the part demolition of the Mont Cenis Tunnel. This tunnel through the Alpine frontier of France and Italy is 8½ miles long. Had this route been left intact, it would have simplified greatly the problem of bringing our Forces home from Italy. The Germans with their customary thoroughness demolished the northern end of the tunnel and laid thousands of booby-trap mines which are still a danger to the South African troops who are tunnelling through hundreds of thousands of tons of debris and fallen rock to restore this vital route. In addition to the serious damage to the tunnel, many railway bridges on the Italian side were demolished, and no fewer than six of these bridges on a section of one mile are being rebuilt by contractors. In the repair the French and Italian Railways are co-operating to the limit of their resources, but soon the work will be hampered by the winter conditions in the Alps and there is little hope of re-opening the route before next Spring.

* * * *

When Track Neatness Pays

An interesting correspondence has been going on recently in our American contemporary, *Railway Engineering & Maintenance*, as to whether it is desirable to go to the trouble of maintaining a "ballast toe line"—that is, a straight and even line where the bottom edge of the ballast meets the formation on which the track is laid. Certain American railways go as far as picking and setting large pieces of stone or slag to form the toe itself, carefully arranged in a straight line; and it is necessary also to see that the formation is level, if a wavy toe line is to be avoided. Some of the engineers who contributed to the correspondence considered that while a neat toe line looks well, it is a luxury of appearance only, and the labour involved in maintaining it could not be justified in wartime conditions. Others took a longer view. A straight toe line cannot be maintained without adequate width of formation, and this is good for the stability of the track; it also helps to define exactly the amount of ballast required to keep the track in good running order. And while concentration on appearance may tend to divert the energy of the men engaged on maintenance from more necessary duties, experience proves that attention to neatness, in whatever form, goes hand-in-hand with attention to all other essentials in track maintenance, and thus has all-round results. As the letter of one engineer put it, "a neat ballast section with a well-defined toe line is a real morale builder for any track gang."

* * * *

Continuous Rail Welding

It is probable that the future will see a considerable increase in continuous rail welding, in order to reduce rail joints to a minimum. Rails up to 90 ft. in length, and a small tonnage of 120 ft. rails, have been produced in Great Britain direct from the mills, but at an extra cost of £2 a ton, and in Germany before the war the 30 m. rail (98 ft. 5 in.) was standard for main-line use; but the technique of modern rail welding has so improved that today it is probably cheaper, with suitable mass-production welding plants, to weld rails together in pairs than to pay the extra cost of obtaining them in 90 ft. or 120 ft. lengths from the few mills which are able to handle such lengthy units. Admirable experience in this direction has been obtained from extensive welding up of 39 ft. American rails, of which 140,000 tons have come to this country during the war, into 78 ft. and 117 ft. lengths. Similarly with some of the elaborate rail-joints which have been devised to give an unbroken path to the wheels, and which tend to become more costly than the disease that they have been devised to cure, welding may prove after all to be a simpler solution of the problem. Until now little has been done in this country towards continuous rail welding in long lengths, comparable to that carried out in the United States in the open; but it seems now clearly proved that such procedure is possible without risks arising from expansion, providing that the holding of the rails is sufficiently tight to prevent movement.

* * * *

Main-Line Diesel Locomotives in France

Diesel locomotives have been used in shunting service on the former P.L.M. Railway in France since 1933, and have established a considerable reputation. Indeed, it was largely as a result of the successful working of these diesel shunters that it was decided to make trials of diesel-electric locomotives for main-line working. Two 4,000-h.p. diesel-electric locomotives were delivered to the unified national railway system (S.N.C.F.) in 1938. The original intention was that these should haul express trains between Paris and Mentone, at an average speed of 62 m.p.h. for the 620 miles. They were, however, kept out of service during the war, and when recently they were put into operation, they were restricted to hauling heavy trains between Paris and Dijon. The engines are a 24-cylinder design, and to meet axle loading conditions, which provide for a maximum of 18 *tonnes*, each machine is composed of two identical coupled units, comprising a main framing with three driving axles and a bogie at each end. Details of these locomotives are given in the October and November issues of *The Railway Gazette, Diesel Railway Traction Supplement*.

* * * *

U.S.A. Diesels Reduce Coal Consumption

A remarkable outcome of the increase in diesel motive power on United States railways is the reduced demand for locomotive coal that this is bringing about. The Bureau of Transport Economics & Statistics, Interstate Commerce Commission, recently published figures, in its *Monthly Comment*, to show that in 1944, had the equivalent of the diesel service on Class 1 railways been performed by steam locomotives, the latter would have consumed 12,400,000 tons of coal; the development of diesel traction is now so rapid that on the basis of the figures available for the first half of 1945, the year's total is likely to be at least 18,000,000 tons. In the five years from 1940 to 1944 inclusive, the number of diesel-electric units in service on Class 1 railways went up from 797 to 3,022, or from 1·91 to 6·93 per cent. of the total number of locomotives in service; and the substitution still continues rapidly. It is significant that in the same period, while the number of steam locomotives was falling from 40,041 to 39,681, the average cost of locomotive coal rose by 88 cents, from $2.45 to $3.33 a ton, or 35 per cent. over the 1940 price. The 12,400,000 tons of coal "displaced" in 1944 by the use of diesels constituted about 10 per cent. of the total locomotive coal consumption, so that the 1945 coal consumption for locomotive purposes is likely to be not more than 85 per cent. of the 1940 figure. No note is given as to the total quantity or cost of the diesel fuel consumed during the same period.

* * * *

S.N.C.F. Telecommunications School

The increasing complexity of the telecommunications system of the French National Railways and the need for ensuring a high standard of skill, theoretical and practical, among those concerned with its operation and maintenance, led the management to consider the setting up of a telecommunications school and to arrange for the South-Eastern region, or former P.L.M. section of its lines, to

undertake the task. The war prevented the work from being carried out on the scale originally intended but the school was opened in 1942 with the demonstration room completed and has been in regular use since, except for a period when the Germans were being driven back from the neighbourhood. It is intended to serve the whole S.N.C.F. system. The equipment is described briefly in a recent issue of the *Revue Générale des Chemins de fer* by Monsieur Gaillard. The demonstration room contains complete working sets of the principal types of apparatus now in use, for telegraphy, telephony, or electric clock circuits, and courses covering the theory of telecommunication engineering, completed by practical work using the equipment, are given at regular intervals. A session lasts usually six months and is attended by 25 pupils, generally five from each region, but courses for pupils from one region only have been given.

* * * *

Ball Signals in America

One form of signal used at the beginning of the railway era consisted of a mast and yard arm, on which balls, baskets, or other shapes were hoisted to convey various meanings. This arrangement was taken from marine practice, where it is still frequently used for local signals at harbours, jetties, and similar places. It appears to have been little used in Great Britain, but it was seen in several Continental countries and to a much greater extent in the United States. Our contemporary, *The Railroad Magazine*, in a recent issue, publishes an illustration of a ball signal doing regular service today at the union terminal station of Portland, Maine, and points out that such equipment is still a familiar sight in the New England States. There are also a few examples in other parts of the country. The hoisted ball, or lamp by night, indicates a clear track, and to distinguish between two or more lines, when this is necessary, one, two, three, or more balls or lamps are hoisted by different sets of halliards. The expression "to give a highball"—that is for a guard to give the starting signal to the driver by lifting above the head and then lowering a white light—is derived from this old-fashioned method of signalling and is constantly heard today. Another expression, "redball," meaning priority freight traffic, may be due to colouring the old signal balls red to indicate the most important line.

* * * *

Locomotive Front-End Research

Elsewhere in this issue is an account of a comprehensive research on locomotive smokebox problems which took place at the University of Illinois in 1933. Though carried out on a laboratory scale, it so far transcends any other scientific investigation into the subject in its range and detail that we make no apology for repairing at this date the previous omission of any account of this work in an English publication. In doing so, however, we would not wish to give the impression that we think the last word already has been said on the subject. The model reproduced the American type of smokebox with diaphragm and netting, in which the flow of the gases is entirely different from the English arrangement. Further, the various nozzles tried were all really variants of the single-nozzle type of blastpipe, though in some the jet was more or less split up. There have been notable developments since then in the use of multiple jets which practice has shown to give positive advantages, contrary to the indications of previous research. It would seem therefore that further research, unrestricted by the limitations of a particular smokebox arrangement or type of nozzle, may well throw more light on the fundamental action of the blastpipe.

* * * *

A Proposed Gas-Turbine Locomotive

Designs have been prepared by a well-known American firm of manufacturers for a gas-turbine locomotive of 4,800 h.p. for long-distance service. In favour of the new method of propulsion it is claimed that the purely rotary motion of a gas turbine, like that of a steam turbine, should result in a minimum of vibration and reduced maintenance costs as compared with a steam locomotive of normal design. The only characteristic likely to affect maintenance adversely would be the high temperatures developed, but useful information in this direction has been obtained from the gas turbines used in oil refinery plants, some of which have shown an exceptional degree of reliability by operating continuously for periods up to two years. An advantage of note would be the almost complete absence of smoke when the gas turbine locomotive was in service, because of the large amount of excess air used. Lubrication costs are not expected to exceed 1 per cent. of the fuel costs. An attractive possibility would be to combine coal-burning with the gas turbine propulsion, but despite promising experiments with pulverised fuel, such a scheme seems as yet impracticable. The difficulty is the inherent low heat release of coal, which requires a larger combustion chamber volume, as compared with liquid fuel, than could be arranged within the limited confines of the railway loading gauge. Colloidal fuels are ruled out at present by the cost of their preparation. A great advantage of the gas turbine would be elimination of the use of water.

Railway Development in Iraq

DURING the past few weeks various announcements have indicated that the Government of Iraq has under the most active consideration the improvement and extension of its railway system. At present, this consists of the section in Iraq of the famous standard-gauge Baghdad Railway from Istanbul to Baghdad, of which the final portion was opened for traffic on July 15, 1940; together with a network of metre-gauge lines constructed by the British Forces during the Mesopotamian campaign of the 1914 war which were made over to the civil authorities set up by the British Government in 1920, and became the outright property of the Iraq Government on April 1, 1936. During the recent war the British Military Authorities constructed a further line from Baquba to Kut to work in conjunction with the River Tigris steamer services in providing an aid-to-Russia route. This line, as we recorded in our September 28 issue (page 306), is now the subject of negotiations between the Government of Iraq and the British Military Authorities, as the Government of Iraq desires to take it over, together with hospitals, canteens, and offices, built for British troops.

An important intimation of the desire for early extension is the announcement that a contract has been made between the Government of Iraq and Balfour, Beatty & Company of London for the construction of a 68-mile extension of the metre-gauge system of the Iraq State Railways from Kirkuk to Erbil, which is a substantial portion of the proposed eventual extension of the metre gauge to Mosul. The contract, which will take about two years to complete, involves about two million cu. yd. of earthworks, as well as 450,000 cu. ft. of reinforced concrete in bridges and culverts. This is one of the first contracts for civil engineering work abroad to be awarded to British contractors since the end of the war.

We learn also that the Railway Administration is proposing to inaugurate fast train services on all lines radiating from Baghdad and, to facilitate this, has in mind the installation of a modern system of signalling. It is intended that speeds in excess of 60 m.p.h. will be run on open stretches of line, and intermediate stations at which tablets are exchanged will be passed at speeds of 35-40 m.p.h. As it is intended at some time to convert the main line from Baghdad to Basra from metre gauge to standard gauge, the signalling equipment of this section doubtless will be of a type that can be converted readily.

* * * *

Argentina's Railway Equipment Position

RECENT political happenings in Argentina in no way have clarified the outlook for the railway companies operating in that country. Their position is admitted on all sides to be serious, and the need for arriving at some decision as to the future of the lines becomes increasingly urgent in view of the expiration of the Mitre Law provisions at the end of next year. Presumably discussions on this matter are still proceeding, so far as is possible in the present state of political instability, between representatives of the British-owned railway companies and the administration. Until these efforts achieve some result, it is unlikely that the rehabilitation of the physical assets of the lines can be undertaken.

In a recent issue of *The Review of the River Plate*, which is published in Buenos Aires, the need of the Argentine railways for locomotives and rolling stock was stressed, and it was pointed out that since the opening of the first railway in Argentina in 1857, of every 100 locomotives constructed by British manufacturers, between six and seven have gone to Argentina. Of a total of nearly 5,500 entering Argentina from all parts between that time and the beginning of the recent war 72·5 per cent. were British. A table is given showing the dominant position which has been enjoyed by the British locomotive manufacturing industry and its gradual decline, together with the precarious motive-power position in the Republic at the present time. This is reproduced on page 412.

The average statistical life of the steam locomotive may be taken as 30 years, at the end of which time its original capital value should have been paid into the renewal fund, and it is due for withdrawal and replacement by a more modern unit. In practice, a number of these older machines may be kept in service for many years longer. Because of the incidence of two wars and a period of acute economic depression between them, it has not been possible in Argentina to adhere to the best practice in locomotive replacement and, as a result, there is now a dangerous renewal-lag, even allowing for the fact that some 50 per cent. of the locomotives over

their statistical age have been modernised and given perhaps a further ten years of life.

Although it is believed that there is little doubt that electrification and internal-combustion units in the future will take care of suburban services, fast, light main-line trains, and all shunting work, the heavy night trains, fruit and vegetable traffic and Argentina's enormous fruit service will have to be handled by heavy units of 1,500 h.p., whether they be steam or of some other form of motive power.

Period	British locomotives		Other locomotives		Total	
	Imported	Still in service	Imported	Still in service	Imported	Still in service
1857-1860 ...	4	—	—	—	4	—
1861-1870 ...	88	—	2	—	90	—
1871-1880 ...	81	—	12	—	93	—
1881-1890 ...	756	78	174	3	930	81
1891-1900 ...	231	147	105	52	336	199
1901-1910 ...	1,539	1,346	570	458	2,109	1,804
Loco	motives ab	ove this lin	e are overd	ue for repla	cement	
1911-1920 ...	514	510	222	215	736	725
1921-1930 ...	709	709	333	333	1,042	1,042
1931-1940 ...	68	68	46	46	114	114
	3,990	2,858	1,464	1,107	5,454	3,965

In considering the sources from which the Argentine can hope to secure locomotive imports, the article in *The Review of the River Plate* states that the total producing capacity of Great Britain, U.S.A., Sweden, and Switzerland is not more than 7,000 locomotives a year. Of these, 3,500 will be ear-marked for home needs. Of the remainder, at least 2,000 will be needed for the rehabilitation of Europe. On the assumption that Argentina requires some 2,000 new units for complete rehabilitation, and that, eliminating Great Britain, U.S.A., and Europe, the remaining countries which are not at present self-supporting in the matter of motive power production, require some 15,000 machines, it means that on a mileage basis only some 18 locomotives a year could be delivered to Argentina on the present global shop capacity. This figure seems to be unduly conservative, as we show below on the basis of British production alone.

Admitting that from the viewpoint of the need of Argentina for locomotives and rolling stock, the picture is grim, the author suggests that the facts he advances should go far towards checking unthinking optimism in Argentina to the effect that Great Britain can step in with some £20,000,000 worth of motive power in the immediate future. He concludes that for the time being, at least, the rehabilitation of the Argentine railways will have to be largely a matter of self-help. If it proves impossible, as seems likely, to import any great number of new units, it will be necessary to modernise existing stock locally. The railway shops are capable of this work, and a considerable amount has been carried out, especially on the State Railways and on the B.A. Southern and Western Railways. It would call for the importation of raw materials, including coal, shop machinery to a greater extent than formerly and finished products such as tyres and axles, which would be of considerable benefit to both countries. British manufacturers of locomotives and railway equipment need not be excluded from such an enterprise, for there is room and probably a need for their participation in it, both technically and financially. His conclusion is that local self help will be essential for several years as an alternative to railway transport chaos.

The article in *The Review of the River Plate* is interesting as a statistical exercise and as an indication of the attention which is being given in Argentina to the recognition which is being accorded the serious equipment position on the railways in that country. On the other hand, as so often happens when reliance is placed on statistics alone, the facts so far as concerns the British locomotive industry are somewhat different from the conclusions which may be drawn from a study of figures. At the present time orders have been placed from Argentina with British locomotive builders, and plans have been made already for the manufacture of 50 locomotives for that country in the 1946-47 programmes of the British industry. Moreover, by 1947 there is every reason to believe that the Britisih industry will have completed orders for locomotives which are directed to it by Government agencies, and thus will have available greater capacity for meeting civil needs. It will then be in a position to suppiy more motive power to Argentina, provided that orders have been received from that country in good time. Obviously, the present financial position of the railways and the uncertainty as to the future make difficult the drawing up of a locomotive building programme.

* * * *

Unification of Engineering Standards

THE Conference on the Unification of Engineering Standards held in Ottawa under the auspices of the Combined Production & Resources Board adjourned on October 6 after a two-week session which brought together many notable engineers of United Kingdom, Canada, and the United States. The discussions included screw threads, pipe threads, drawing practice, and limits and fits, and a solid basis for agreement was reached on many aspects. On the basis of agreements reached by the delegates, proposals on specifications will be developed through the normal machinery in the various countries. The fundamental differences between British and American screw threads forms, which caused tremendous production and supply difficulties during the war, were resolved to the point where the delegates were prepared to return to their respective countries with a specification for a basis thread form that would provide a unified standard for all countries employing the inch system. A series of associated diameters and pitches has been worked out which should simplify existing practice and yet provide an adequate range of choice for all general requirements. The proposal on a basic thread form was by far the most outstanding accomplishment of the conference.

Agreement was also reached on acme and sub-acme threads, used extensively on machine tools and other mechanical devices where a traverse motion is required. These specifications still have to be submitted to industry in America, Britain, and Canada through national standard bodies, but the conference felt that what it termed "an A.B.C. standard" will be approved. Considerable progress was made in assembling engineering data on high-duty studs in light alloys, but the diversity of practices, particularly between Great Britain and the United States, made it impossible to formulate definite recommendations for a unified practice. The meeting on pipe threads, while not conclusive, resulted in an invitation to British and Canadian representatives to continue discussions at the Convention of the American Petroleum Institute in November. This invitation will be extended also to valve and fitting manufacturers, and other interested parties.

* * * *

South African Locomotive Performance

WE have recently received, from the Institute of Transport, a paper read at its Cape Peninsula & District Sub-Centre on April 3, 1945. The author, Mr. A. E. Arnold, has made a careful study of South African locomotive performance over many years, and has also studied British practice, chiefly through Mr. Cecil J. Allen's articles in our associated contemporary, *The Railway Magazine*, and thus has been able to gather into this interesting paper a useful estimate of the present-day possibilities of the 3 ft. 6 in. gauge in South Africa.

While frankly admitting at the outset that certain high-speed steam services, such as the pre-war "Cheltenham Flyer," "Coronation," and "Coronation Scot" services on British lines, as well as certain American high-speed trains, cannot enter into the comparison (as they are specialised services), Mr. Arnold contends that the difference between pre-war performances on the 4 ft. 8½ in. and the 3 ft. 6 in. gauges is not so great as is generally imagined, and that useful comparisons can be made between work on the 3 ft. 6 in. gauge and that of secondary main-line services on the standard gauge.

In South Africa it is practicable to run at speeds varying from 60 to 65 m.p.h. without discomfort; and if the track were adapted for this rate of travel there would be little to choose between standard gauge and South African schedules. The need for this improvement is all the more pressing in view of the competition likely to arise after the completion of the South African National Road Scheme.

Examination of existing schedules has shown Mr. Arnold that too much time is lost nowadays through dilatory station working, inadequate track layout, and locomotive servicing. Curves and junctions should be redesigned to avoid speed reductions below 50 m.p.h. The author's suggestion is, in fact, that an *average* speed of 50 m.p.h. should be aimed at.

South African locomotives somewhat resemble American in their

general characteristics; and there seems to be no special reason why certain significant American methods of locomotive operation should not be applied. Among these, Mr. Arnold singles out the policy of long engine runs for particular mention, as it does not seem to have been pursued to anything like its logical extent in South Africa which, like the U.S.A., is a land of great distances. Certain isolated trial trips have shown in the past that very long runs are possible: about twenty years ago, for example, 4-6-2 locomotive No. 861, of class "16 D," ran the entire 956 miles from Cape Town to Johannesburg.

Admittedly, long engine runs would call for different handling and for improved maintenance of the locomotives. If overall average speeds of 50 m.p.h. are to be attained, oiling, greasing, coaling, and watering would have to be completed within 5 minutes or so at the stops concerned. This is quite feasible if modern methods are used, and if these duties are performed by mechanics, relieving the driver and fireman of all duties except the actual driving of the engine and the raising of steam, respectively. Locomotives allocated to long runs should be double-shifted, as this system offers certain advantages over the all-round pooling of locomotives, which has some undesirable results in practice.

These reforms call for some modifications to current running shed practice. Mr. Arnold reminds us that in many of the modern high-speed diesel units, two mechanics are carried on the locomotive. Although this need not be imitated on long steam runs, it should not be expecting too much to have mechanics standing ready for the servicing of steam locomotives on their arrival at depots. It should not be necessary to remove an engine from its train for coaling, watering, and servicing generally.

Another factor contributing to loss of time and consequent lowering of overall speed is the time spent at junctions. The "Union Express" was allotted 15 minutes' standing time, and the "Union Limited" 13 minutes, at Kimberley, for detaching a saloon to Durban and attaching another saloon from the latter city. Other trains are cited, with even more excessive times at junctions.

A critical analysis of locomotive performance over the South African main line (*a*) *via* Salt River Junction, and (*b*) *via* the relief main line, is one of the most interesting features of Mr. Arnold's paper. It may be recalled that this line originally was laid to the 4-ft. 8½-in. gauge. The performances analysed were all obtained with locomotives (4-6-2s of "5th" class and "10 CR" class) now considered obsolete; and Mr. Arnold's reason for selecting these logs of runs is to suggest that, by comparison, more modern locomotives should show even greater capabilities.

Over this line, the 7-mile section from Bellville to Eerste River was run at a maximum speed of 56½ m.p.h. with the "10 CR" class (4-ft. 9-in. driving wheels), and 58½ m.p.h. with the "5th" class (5-ft. 1-in. driving wheels). The gradients on this rather switchback section are in places as steep as 1 in 80, and there is a long climb of 1½ miles at 1 in 100 to 1 in 132 in the approach to Eerste River. Recorded speeds up to 57·7 m.p.h. over the summit of the latter bank show that medium grades on flat curves are no severe handicap to sustained high speeds.

Engine No. 782, scrapped at least 5 years ago, with 5-ft. 1-in. driving wheels, hauling 32 axles (268 tons), made the fine time of 11 min. 17 sec. start-to-stop from Bellville to Salt River—an average of 51·2 m.p.h., with a recorded maximum no higher than 62·5 m.p.h. Thence to Koeberg Road, the 7·7 miles were covered in 7 min. 50 sec. (58·8 m.p.h. average), during which time the engine was worked very easily, with regulator three-quarters open and cut-off at 40-30 per cent for the first mile; light steam was used for the remaining 6·7 miles to Koeberg Road. Even the high-speed electric inter-urban runs of the U.S.A. show few schedules faster than this effort, which was made with comparative ease.

Other runs given are of particular interest in showing (1) the effect of indifferent track, (2) the behaviour of moderately-dimensioned locomotives on 240-ton trains, and (3) the psychological effects on the drivers of speed limits for turn-outs soon after getting away from stations. The last-named restrictions are often very severe in South Africa—down to 12 m.p.h. in some cases—and Mr. Arnold cites Barassie Junction, L.M.S.R., as an example of a well-designed turn-out which can be negotiated at 50 m.p.h. Finally, Mr. Arnold refers to some notable pre-war expresses on the 3-ft. 6-in. gauge in Java and Japan; and even on the 15-in. Romney, Hythe & Dymchurch line a speed of 60 m.p.h. has been attained. He calls to the South African Railways to lead the way in 3-ft. 6-in. gauge practice, and clinches his argument by demonstrating the capabilities of 4-8-2 locomotives on trains of about 450 tons on the Cape-Town-Touws River section (160 miles), and gives some illuminating logs of local runs, including some in which steam trains run among electric on the Cape Town suburban lines. His general conclusion is that if the state of development and maintenance of the track could be advanced to a degree comparable with that to which the steam locomotive has been brought, greatly improved performances would result, so much so that protagonists of electrification would be deprived of most of the power of their arguments.

* * * *

Advice Abounding

RESOURCEFULNESS is recognised as one of the military virtues, and when properly cultivated is much to be admired. In some soils, however, the seed patiently sown by instructors produces only a facility for telling other people what they ought to do. Most of the outstanding industrial, political, and international problems have been settled in Service messes during the past six years, and the solvers are itching to tell the civilian world all about it. Tactful employers will recognise the necessity of receiving a certain amount of advice from demobilised staff who have been encouraged to debate the deficiencies of the pre-war world, and to prepare themselves for building a new one by voting that existing ideas of industrial organisation are either obsolete or wilfully perverted.

When it was first made known that discussions of current affairs were to be part of the military curriculum, general satisfaction was felt that the soldier, sailor, or airman would not be insulated from contemporary thought. Provided such discussions are regarded only as a mental exercise they are praiseworthy, but so many of the debaters attach undue weight to their conclusions. We are familiar with the general line taken by such gatherings. Post-war housing was a standby subject to set the ball rolling, and very soon it would be proved to the satisfaction of all present that pre-war architects had missed their vocation.

If discussion then flagged, the officer in charge would suggest changing the topic to the nationalisation of the railways. This usually had the same effect as pouring a bottle of paraffin on a smouldering bonfire. It was generally agreed that the railways ought to be nationalised because the services they provided before the war were bad; because the companies held the canals by the throat, menaced the development of air transport, and were the wicked uncle of the road haulage industry. All these charges were made with a creditable display of noble emotion but with the minimum of informed facts. Proposed reforms were then discussed on the grand scale that recommends itself to a society whose least worthy members are housed, fed, and cared for according to a standard pattern instead of in relation to their individual efforts, and where indeed promotion is sometimes bestowed upon the undeserving as the simplest method of getting rid of them.

Leaving the learned disputants to a discussion of ways and means for introducing Western democracy to backward races in the Orient, let us consider another factor that predisposes some members of the Services—particularly if commissioned—to believe that they are in possession of all the answers. It is a necessary Service fiction that any officer who has passed the prescribed examinations is capable of replacing any other officer of similar rank and trade. The newcomer to a post usually finds his predecessor just darting out (if he has not gone already) and exclaiming over his shoulder: "Sorry I can't stop to show you round, old boy, but I'm off on a forty-eight."

Ten minutes later the newcomer may be called to a conference with his commanding officer, who innocently supposes him to be in possession of all the facts relating to his department, and armed with solutions to the knottier problems just gleefully shelved by his forerunner. It is not to be wondered at if such gratifying faith in his omniscience and powers of divination held by others inflates his self-esteem, and leads to impatience with the civilian slowcoach who still believes that long practical experience is a necessary basis for successful administration.

No doubt it is a good thing that this storehouse of advice is waiting to be unlocked. Modern thought favours consultation, and whereas the Elizabethan apprentice did not aim higher than marrying his master's daughter, the modern employee expects to help his father-in-law run the business through a joint production council. We do not doubt that some captains of industry envy the professional footballer, who is handsomely paid for allowing excited thousands to shout advice at him; whereas the modern industrialist is expected to pay the people who give the advice.

LETTERS TO THE EDITOR

(The Editor is not responsible for the opinions of correspondents)

"N or M"

"Crathorne," Thorneyfields Lane,
Stafford. October 17

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—Thank you for your interesting footnote to my letter in your issue of October 5. In reply to your query as to how long the names were retained, I may say that the last time I saw the *Prince of Wales* in service—to the best of my recollection—was on the Bedford-St. Pancras section sometime between 1915 and 1920.

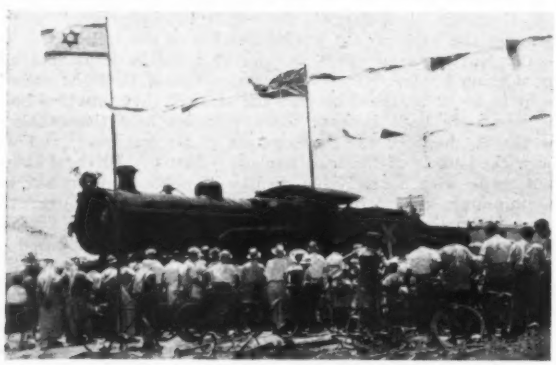
Yours faithfully,
F. PLANT

Ignominy, or the Lament of the Steam Railcars

P.O. Box 546,
Haifa. July 25

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—The mute appeal in the eyes of "the engine that failed" (Mr. Townroe's clever photograph on page 591 of your issue of June 15) still haunts me, though ere now it will have vanished



Top: Inaugural train of de-engined steam railcars hauled by 4-6-0 locomotive proceeding from Haifa to Naharia with Palestinian excursionists. Centre: Closer view of the 4-6-0 locomotive on arrival at Naharia. Bottom: Another view of Palestinian excursionists gathered at Naharia after the inaugural trip

with prestige regained. Not so could it ever be with the hopeless victims of the tragedy that lies beneath the gaiety of the scene at Naharia on the sea coast recorded on the enclosed photographs.

Until recently they traversed the countryside bravely; two steam railcars, each with its attendant articulated trailer; positively purring with satisfaction at their independence; daintily refreshing themselves with sips of water and spoonfuls of fuel; conscious of the adequacy, for their missions and lawful occasions, of their hundred horses apiece, perhaps too conscious.

Whatever it may have been, their rival, with his two thousand odd at his behest, whom hitherto by their presence they had compelled to do an honest day's work instead of galumphing with diminutive trains has triumphed once again.

Helpless, since their little "works" were removed by the surgeon, or, in other words, "butchered to make a Palestinian holiday," they are doomed to be dragged to and fro, day in, day out, at the chariot tail of their monstrous conqueror. I think they must have that same expression which Mr. Townroe caught could I but catch it.

Yours faithfully,
A. L. JONES

Rehabilitation of French Railways

58, Rue de Courcelles,
Paris 8. October 13

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—The following table gives a summary of the principal services operated by the S.N.C.F. as from October 8. When the state of the French railways a little over a year ago is borne in mind, it is apparent that a most remarkable recovery has been effected, in spite of the lack of essential materials.

Some of the timings listed are really brilliant, in view of the numerous permanent-way slacks still in force. The Paris-Bordeaux and Paris-Lyons trains, in particular, require running speeds of 68 to 75 m.p.h. between slacks.

	Distance	No. of services daily	Fastest train		Type
			Time	Speed	
	miles		hr. min.	m.p.h.	
Paris—Lille	156·0	10	3 0	52·0	D
Paris—Strasbourg	311·4	8	6 15	49·9	B
Paris—Bordeaux	359·2	10	7 15	49·7	E
Paris—Lyons	317·0	12	6 35	48·3	S
Paris—Bayonne	482·5	6	10 19	46·8	E
Paris—Brussels	192·3	6	4 15	45·3	D
Paris—Nantes...	245·3	6	6 01	40·8	S
Paris—Marseilles	535·8	8	13 23	40·0	S

S = Steam E = Electric D = 3-car diesel-electric train B = 2-car Bugatti railcar.
Note.—The fastest Paris—Lyons and Paris—Bordeaux runs are not made by the same trains as the fastest Paris—Marseilles and Paris—Bayonne runs

Yours truly,
BARON VUILLET

Compartment or Open Stock for Suburban Services

London. October 17

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—In the article in your October 12 issue you say that the controversy regarding the respective merits of compartment and open stock for suburban electrified stock is likely to be re-opened. I cannot believe this, as I thought compartmented non-corridor stock for electric services died long ago and that we still have to ride in it because the old steam-hauled coaches of the Victorian era won't wear out.

Surely the railways will never build any more compartment suburban coaches? In modern open electric trains it is possible to sit and stand in comfort, but in a compartmented vehicle around London no-one is comfortable. Perhaps that is an overstatement, because in an empty compartment one can stand in comfort!

Yours faithfully,
H. A. C.

16, Colebrooke Drive,
Wanstead, E.11. October 17

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—Referring to the article in your October 12 issue on the subject of compartment or open stock for suburban services, as a traveller I would say most definitely that open stock is in every way inferior to compartments, and, in fact, I cannot find any reasonable argument that can be put forward to support the use of the open coach. In the second paragraph of the article are mentioned some advantages of compartment stock. I would add, the provision of racks for light luggage, hats, and umbrellas, apart from the general superior amenity.

Your contributor seems to assume that all trains at most times of the day carry standing passengers; at peak periods certain trains do carry standing passengers, but this is for a short period only: in any case, I think that standing in a compartment is much to be preferred to standing in an open coach holding on to a strap (if one is lucky), carrying one's parcels, and with 30 or 40 other persons swaying and tossing about with the movement of the train. (In compartments it is

not often necessary to hold on to anything at all, and reading is usually possible; also one's impedimenta can be stowed safely on the rack). It is noticeable that where standing takes place in open coaches, the crowd is concentrated around the doors; the body of the coach is usually quite empty of standing persons. This makes for considerable difficulty in entering and leaving the car, and surely for delay in operating the train service.

If it is taken that the shortest suburban journey is of about 20 minutes' duration (many are longer where stopping trains are involved) the outlook for the comfort of passengers is grim indeed. Even 20 minutes' rest on a comfortable seat after a worrying day, often entailing much standing about, is a welcome respite on the homeward journey.

The use of power-operated doors is also mentioned, and I would submit that these are not always an unmixed blessing. In summer they are firmly closed during the journey, and in winter they all open at the same time, letting in the cold air.

It is noteworthy that the Southern Railway, which operates one of the most extensive electric suburban services in the country, has retained the compartment type of stock, and it would be interesting to have their views and those of their passengers.

The general introduction of the open coach on railways seems to me to be a retrogressive step, and almost reduces the comfort of railway travel to that of that most uncomfortable of all public service vehicles, the bus.

Yours faithfully,

C. F. KING

L.N.E.R. Locomotive Rebuilding

23A, Golders Way,
London, N.W.1. October 12

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—The recent conversion of one of the Gresley "K3" Moguls from three to two cylinder propulsion is stated to be for the purpose of saving maintenance costs, but to me it seems a curious way of doing it. As you state in your editorial note of September 28 this must have been an expensive rebuild, seeing that it involved the provision of a new boiler, new cylinders, and a new driving axle. It is true that the three cylinders and the conjugate valve motion are dispensed with, but instead there is a boiler with 225 lb. instead of 180 lb. per sq. in. pressure, with consequent heavier maintenance charges plus all the proved disadvantages of the two cylinder locomotive as a vehicle—greater hammer blow and tendency to heavy shouldering action, both of which effects will lead to increased wear and tear on the road.

It would appear that any saving in locomotive maintenance will be only at the expense of increased track renewals, after the high capital cost of the conversions has been paid off.

At the same time, however, I feel that you are inclined to exaggerate the importance or significance in so far as it affects L.N.E.R. locomotive policy as a whole. You refer to a fixed policy being pursued with the utmost rigour. Actually, so far as I am aware, the "K3" 2-6-0 No. 206 is only the second Gresley engine to be converted from three to two cylinder propulsion; the other was one of the "D49" 4-4-0. Far from pursuing a fixed policy it would seem that Mr. Edward Thompson is proceeding with the utmost caution. Little if anything has been published regarding his alteration of the "D49" and in all probability the engine is being kept under close observation for a lengthy period so as to obtain the fullest possible comparative data, between two and three cylinder locomotives of otherwise similar design.

The same procedure probably will be followed with the converted "K3" Mogul for one can hardly imagine the L.N.E.R. embarking upon so expensive an alteration to the entire "K3" class of 193 locomotives which have given such successful service, until conclusive evidence is available that the expected savings would in fact be realised.

Yours faithfully,

W. J. REYNOLDS

London and Dover in 1867

TO THE EDITOR OF THE RAILWAY GAZETTE

Northwood. October 15

SIR,—In your issue of October 12 Mr. Kenneth Brown asks if the L.C.D.R. took any advantage in its time schedule from its shorter route to Dover before the South Eastern Railway opened its Sevenoaks short cut in the spring of 1868.

I cannot discover any appreciable difference in the time taken by the expresses run by the two companies. Was there not some agreement, perhaps informal, not to cut the time schedule for the boat trains? It was approximately two hours.

As regards the ordinary express, I see that in July, 1867, the L.C.D.R. 8 a.m. from Dover took 5 min. less to Victoria than the S.E.R. 8 a.m. to Charing Cross, and that the down express from Victoria at 4.20 p.m. was also 5 min. quicker than the 4.15 p.m. express from Charing Cross. Both were due at Dover Town at 6.50 p.m.

Yours faithfully,

REGINALD B. FELLOWS

Publications Received

Sectioned Perspective View of Locomotive Front End. Reprinted from *The Railway Gazette*, June 15, 1945. London: The Railway Gazette, 33, Tothill Street, Westminster, S.W.1. 12 in. × 9 in. 3 pp. and a folding plate. Price 2s. 6d.—This publication is a reprint on art paper of the illustrated article and the drawing which appeared in *The Railway Gazette* of June 15, 1945. It includes a remarkable drawing by Mr. V. C. Stockton, one of the L.M.S.R. technical staff at Derby, showing the front-end arrangement of one of the latest Pacific locomotives of that company. The reprint forms a handsome and permanent record of a subject which has proved to be of wide interest in locomotive circles.

The Stock Exchange Official Year-Book, 1945. London: Thomas Skinner & Co. (Publishers) Ltd., Gresham House, Old Broad Street, E.C.2. 10 in. × 7 in. × 4⅛ in. Pages i-clxxii and 1-3196. Price £4. Including postage (British Isles) £4 1s. 6d.; (Europe) £4 3s. 9d.; (U.S.A. and Canada, duty paid), $25; (elsewhere) £4 5s. 6d.

The Stock Exchange Official Year-Book Supplementary Index, 1945. Same Publishers. 10 in. × 6¾ in. 232 pages. Price £1.

Due to war conditions *The Stock Exchange Official Year-Book* is once again published later than usual. The 1945 edition is, however, particularly welcome because it reinstates certain features which have had to be omitted from the 1941 and subsequent editions. These include an authoritative article on Indian finance and official statistics relating to the finances of the Dominions and Colonies and of certain other countries. Another pleasing restoration is that of the General Information section, which appears after the "Supplement" and "Emergency Addresses," and contains particulars relating to stamp duties, trustee and "Chancery" investments, Dominion income-tax relief, maturity dates of certain loans, and lists of statutory and chartered companies. As usual, information received too late for insertion in its appropriate section will be found in the Supplement, which includes on page 3132 particulars of the formation, etc., of the Irish Transport Company. A brief notice of this company also appears under the heading of the Great Southern Railways Company in the section "Railways—Dominion and Colonial." Other features of the publication are retained and the price remains the same notwithstanding the increased number of pages. Information relating to the London Passenger Transport Board, the Port of London Authority, and the Railway Clearing House will again be found under "Public Boards," with newly-inserted particulars of the Northern Ireland Road Transport Board. A summary of the railway control agreements is given on page 321 in the section "Railways—Great Britain and Northern Ireland." Under "Indian Railways" recent acquisitions by the State are recorded as well as particulars of earlier State purchases by means of annuities or other financial arrangements.

The 1945 edition of the *Supplementary Index* has been so considerably revised and expanded that it is in reality a new publication. It contains brief details of some thousands of defunct and other companies, notices of which have been published in previous editions of the *Year Book*, with the dates of dissolution. Railway historians should be particularly interested in this record of the numerous railway companies in Great Britain and Ireland which ceased to have an independent existence towards the end of the nineteenth century and in the earlier years of the present century.

Prolite Hard-Metal Tips and Tipped Tools.—We have received from Prolite Limited, a subsidiary company of Murex Limited, Rainham, Essex, an illustrated catalogue giving particulars of Prolite hard metal which is supplied in the form of complete tools or as tips for making into tools to suit users' requirements. This metal is a cemented tungsten carbide and when once made into any required shape its form can be altered only by grinding. Prolite hard metal is a product of the Murex Metallurgical & Engineering Departments, where it is made from metal powders extracted from the ores and refined in the same works. It is made in different grades to suit the material to be machined, and the working conditions, pellets and dies for the production of wire, bar and tube, tungsten rod and wire, molybdenum rod, wire, sheet and strip, also can be supplied. To assist users of Prolite hard-metal tips and tipped tools, a slide rule is supplied which gives cutting speeds and feeds and other information of use when machining various metals.

The Scrap Heap

"Restaurant cars are coming back this winter," says a rail-news report. That's just the trouble; they're always going the opposite way.—*From "Charivaria" in "Punch."*

* * *

THE FOSSILS RETURN

The L.M.S.R. state that 41 container loads of geological exhibits have been brought back to the Geological Museum, Kensington, from "evacuation" in North Wales. Altogether 150,000 fossils, contained in 100 cabinets of 4,400 drawers had to be moved and special precautions had to be taken in loading to safeguard these priceless fragile exhibits. Not a single item was damaged.

* * *

100 YEARS AGO

From THE RAILWAY TIMES, *Oct.* 25, 1845

ASSISTANT RAILWAY SECRETARY.—WANTED, a Gentleman of strict business habits, and acquainted with the routine of railway proceedings, particularly in the earlier stages of a projected line, as Assistant Secretary, or Managing Clerk. Salary £100 per annum, exclusive of travelling expenses. Application to be made, by letter, with references and testimonials, addressed to W. C. Calthrop, Esq. Spilsby, Lincolnshire.

PRELIMINARY ANNOUNCEMENT.

BOMBAY, AGRA, AND DELHI RAILWAY COMPANY, with its Branches and Extensions.—Provisionally registered, pursuant to Act 7th & 8th Vict. c. 110.

A Company having for its object the above comprehensive scheme is now in progress of formation, and a highly influential list of Directors will shortly appear; in the meantime any communication may be made to Messrs. Robertson and Co. 116, Jermyn-street, St. James's, until suitable offices can be procured in the City.

TO THE EDITOR OF THE RAILWAY TIMES.—SIR, My name having been placed on the Provisional Committee List of various railroad speculations without my consent, I am under the necessity of requesting you to insert in your Journal that I have nothing whatever to do with the undermentioned projects:—

Direct Manchester, Leeds, and York.
Thames Valley Railway.
Oxford and Salisbury Direct.
Eastern Counties Cambridge and Worcester.
Southern Junction Railway.

I have the honour to be, Sir, your obedient servant,
GEORGE LIONEL DAWSON DAMER.

Limerick, Oct 17, 1845.

ARTIFICIAL LEG NOT PERSONAL LUGGAGE

In a recent letter to *The Irish Times*, a British Army officer, who had lost a leg and was taking with him a pair of crutches and a spare artificial leg, complained that on arrival at Westland Row Station, Dublin, to catch a train to Wexford, the ticket collector refused to admit him unless the excess luggage rate were paid on the spare artificial leg on the ground that it was not personal luggage. The officer had, in consequence, to go round by another barrier and hobble down a flight of steps on crutches. An official of the Public Relations Department of the Irish Transport Company, when asked by an *Irish Times* reporter to comment on the occurrence, declined to do so.

* * *

COSMOPOLITANISM IN COACHING STOCK

On a Sunday in August last, the 6.30 p.m. express from Cheltenham to Paddington was made up of the following vehicles, in this sequence from the engine:—G.W.R. clerestory-roofed coach in wartime livery, two newly-painted G.W.R. composite coaches in standard brown and cream, a set of five L.N.E.R. standard bow-ended coaches in varnished teak, a G.W.R. coach in wartime brown, a Southern coach in malachite green, and, fittingly, to conclude, a third-brake of the L.M.S.R. in Midland red. It would be difficult to find a more prismatic variation of colour in a single train than this, particularly as it did not include any through portion to or from other lines.

* * *

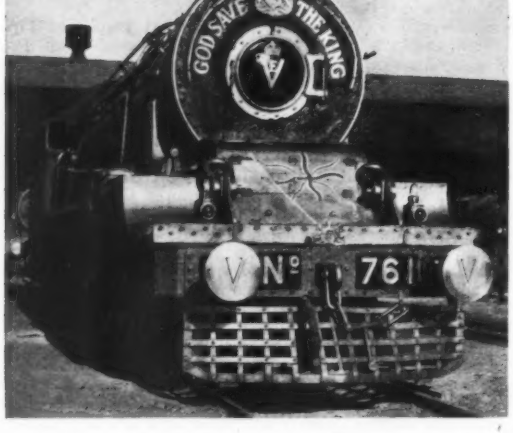
HIGH JINKS ON THE B.B.C.I.R.

The following was printed in *The Tribune*, a daily newspaper published in Lahore, dated September 21:—

Frontier Mail Escapes Disaster

Bombay, September 19.—The Frontier Mail, which left Lahore on Sunday night and arrived here on Tuesday morning had a miraculous escape from what might have proved to be a most serious accident. While the train was running at full speed beyond Ratlam on this side of Bombay, and was crossing a bridge over a small river, the long rod of clutch that is fixed to the biggest wheel of the engine broke without anyone knowing what had happened. The broken part striking against the wheel made noise and interfered with the speed of the train when the driver, apprehending some trouble, stopped the train and as he got down he saw damage done to the engine. The danger to the train was so great that if the engine had derailed the whole train would have been smashed. The same train escaped another mishap when the driver showed great presence of mind while the Frontier Mail was running fast after a new engine had been attached to it. On the same rail-line the driver saw another train coming from the opposite direction. The driver at once put the train on its back wheel and drove behind as far as he could and luckily reached the railway station which was very near. Thus was averted another mishap to the Frontier Mail during the same night. The Frontier Mail arrived four hours late.

N.W.R (I) VE-Day Celebration



Class "XS" locomotive No. 761, North Western Railway, India, at Lahore Shed on VE-Day

RAILWAY QUESTIONS AND ANSWERS

Statement: Most railway stations are dingy, dirty, and out-of-date. The State-controlled Underground railways have shown more enterprise in the modernisation of their stations than have the privately-controlled railways.

Answer: It is not correct to say that most railway stations are out-of-date. The railways have redesigned and rebuilt a large number of stations in the last twenty years, among them Leamington, Cardiff, Swansea, Leeds, Doncaster, Luton, Margate, Ramsgate, Surbiton, Richmond, Exeter, and Waterloo. But for the war many more, by now, would have been rebuilt. As soon as manpower and materials become available this rebuilding programme will be continued. As for the allegation contained in the rest of the question: London Transport is not State-controlled. Indeed, it is one of the criticisms of the Transport Board that it is a hybrid—neither private enterprise nor State-control. The stockholders who bear the risk have no say in the management of their property; the Board is appointed by trustees consisting of the Chairman of the London County Council, a representative of the London & Home Counties Traffic Advisory Committee, the Chairman of the Clearing Bankers' Committee, the President of the Institute of Chartered Accountants, and the President of the Law Society. It is easy to compare favourably the London Transport stations with those of the main-line railways, if account is not taken of the fact that almost all L.P.T.B. stations have been built within the last forty years. They are altogether a more simple building job than that involved in constructing a main-line railway station.—*From "Answers to Questions and Statements," issued by the British Main-Line Railway Companies, 22, Palace Chambers, London, S.W.1.*

* * *

The members of the Kings Cross No. 2 Branch of the Railway Clerks' Association of Great Britain & Ireland have sent £68 16s. 8d. to British United Aid to China.

* * *

PLEASE FARES

San Francisco civic authorities are so disturbed by the rudeness brought on by the war that they are conducting courtesy classes for all tram-drivers and conductors.—*From "The Daily Express."*

A correspondent remarks: "The trouble in this country would be where to find the teachers."

* * *

PRAISE FOR L.M.S.R.

In these days when so much criticism is fired at the railways, it is pleasant to record praise. A friend who has just travelled from Euston to Glasgow applauds the service in the restaurant car.

Breakfast, lunch and dinner are all the same price, 3s. 6d. Cost of drinks is moderate. Bordeaux Superieur is 9s. 6d. a half-bottle. Burgundy 12s. 6d., whisky and gin 1s. 6d. a measure.

However, what pleased my friend most was the courtesy of the attendants. While there were no dining cars these men were porters or ticket collectors. Now they are back, they give service with a smile.—*From "Londoner's Diary" in "The Evening News."*

* * *

TAILPIECE

(*Argentina needs new locomotives and rolling-stock*)

Because of age, and wear and tear, and other forms of loss,
They are short of locomotives underneath the Southern Cross,
And rolling stock is low in Argentina.

She has twenty thousand miles of rail to keep in good repair,
And food to feed the nations is the precious freight they bear.
A larder for the world is Argentina.

And may her railways flourish in this more peaceful day,
And rolling stock be ready to get the food away
From pasture to the ports of Argentina.

E. C.

OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

SOUTH AFRICA

Dry Dock at East London

Details have now been released of the dry dock under construction at East London. Its construction, (like that of the Sturrock Dock at Capetown) was undertaken at the request of the Admiralty. It was designed to take any cruiser, and when completed will have cost about £1,500,000. The Admiralty is providing pumps and constructional plant to the value of about £500,000.

The dock will have an overall length of 723 ft., a width of 110 ft., and will be 32 ft. 6 in. deep. It will be able to accommodate ships of 17,000 tons. The dock is being constructed at the confluence of First Creek and the Buffalo River. The work was begun at the end of 1942 and the dock has been excavated from the solid rock. Hundreds of natives and a large European staff are engaged on the construction.

The preliminary work on the dock comprised a number of major engineering undertakings. First Creek had to be diverted into Buffalo River, to reach the bank of which, after a culvert 550 yd. long had been completed, it was necessary to tunnel 575 ft. through a hill. To provide space for the dock the main road had to be moved back, necessitating a high fill to carry the roadway across First Creek. Hundreds of tons of rock were removed from the side of a hill to enable the roadway to pass, through a 50-ft. high cutting, on to the bridge. The excavations are nearly completed and the concrete work is under way. The caisson is being fabricated in the dock itself and will be floated into place when the dock is filled. The pumps will fill or empty the dock in about four hours. It is expected that the dry dock will be completed by the middle of next year.

War Effort

Speaking at a rotary club meeting in East London recently, Mr. C. M. Hoffe, General Manager of Railways, said that in the first five years of the war the South African Railways moved a yearly average of 41,000,000 tons of goods, as against an average of 32,900,000 tons in the preceding five years. It had been done with rolling stock at the same level as in pre-war years. Passenger traffic was also higher during the war—776,668,653 passenger journeys were made then as against only 488,756,992 in the five years before the war.

Railway Deficit

Mr. F. C. Sturrock, South African Minister of Transport, speaking before a conference of the Rail Workers' Union on October 2, 1945, stated that the South African Railways had entered a difficult period and that the time had come for railwaymen to heed the danger signal contained in the constantly growing expenditure. He said that despite the higher revenue, the railways were losing money, and that the first five months of the financial year showed a deficit of £1,150,000. This was a sign which neither he nor any of the railway staff associations could afford to ignore.

He was determined to maintain the increase in salaries and wages which already had been granted, and to safeguard the extra benefits which had been conceded to the staff. "What we have we hold" was his motto as well as that of the staff associations, but on the facts of the case, a guarded approach to any question regarding further expenditure was necessary.

Mr. Sturrock did not expect railway earnings to decrease; it was the business of all railwaymen to see that they did not, but the best way to maintain the present conditions was to check and if possible reduce expenditure. Two items in particular were a heavy burden. The payments for cost-of-living allowances already amounted to more than £6,000,000 a year, and the payments for overtime would this year account for nearly £5,500,000, as compared with less than £3,500,000 in 1943-44.

Staff Matters

The Minister referred to the many improvements in recent years in the service conditions of railway workers. Of the 1,876 new houses being built for the railway staff under the new programme, 623 were being reserved for the rail workers. Special leave privileges introduced last year cost £50,000 for this group alone, and the maximum daily rate of pay last year had increased from 8s. 6d. to 11s. a day for married men, and from 7s. 6d. to 10s. a day for unmarried men—an advance of more than 25 per cent. on the original rates. In addition, cost-of-living allowances were being paid on the most generous scale possible to meet the problem of the low-paid worker who felt the pinch of rising prices most acutely.

Mr. Sturrock congratulated the group on its increase of membership, which had risen from only 757 in 1942 to 6,400 out of a possible total of 12,000 railworkers today. He also said that complete contact had been established between the staff associations and the Minister and the management. The approach to all railway problems affecting the staff was by means of consultation and frequent meetings. The Factory Act had been applied to the South African Railways & Harbours last year. Great benefits had accrued to the employees, but the cost had been high and only by co-operation could the problem of growing expenditure be tackled successfully.

Financial Position

The results of working the railways, harbours, steamships, and airways of the South African Railways & Harbours Administration for the month of July, 1945, and the period April to July, 1945, are as follow:—

	July 1945	April-July, 1945
	£	£
Revenue	5,378,275	20,397,407
Expenditure	5,652,396	21,313,291
Deficit	274,121	915,884

UNITED STATES

Main-Line Realignments

The Interstate Commerce Commission has authorised the Northern Pacific Railway to undertake a line-improvement scheme of considerable extent between New Salem and Kurtz, North Dakota. The existing route, which is sharply curved and circuitous, measures 25·8 miles, but the new route will be 16·5 miles long. The Public Services Commission of North Dakota opposed the abandonment of the original line, on the ground that Almont, midway along its length, would be left without railway communication, but the I.C.C. pointed out that the removal of certain grain elevators from the old to the new line would cause insufficient justification for leaving 12 miles of the old route still in use. The new main line is to be of single track, with a ruling grade of 1 in 220 in each direction and no curve sharper than 174 ch. radius. The estimated cost is $2,735,200.

Another costly realignment proposal is the subject of application to the I.C.C. by the Chicago, Rock Island & Pacific Railway. It is for the construction of 16·2 miles of line between Paris and Floris, Iowa, and for the abandonment of 17·6 miles of existing line between the same points.

Judgment Concerning Train Lengths

An important judgment was delivered by the Supreme Court of the United States on June 18 last, in connection with what is known as the Arizona train-limit law. In the past certain western States, of which Arizona is one, in what they have claimed to be the interests of safety, have limited the lengths to which trains might be made up within their State borders. The Arizona limits have been 14 coaches in the case of passenger trains, and 70 bogie wagons in that of freight trains. As a result, the railways serving Arizona have been forced to break up many longer trains on reaching the Arizona border, with uneconomical use of motive power and men, and increased line congestion in consequence.

As soon as the United States entered the war, the position became so difficult that the Interstate Commerce Commission, in the national interest, in September, 1942, issued an Order suspending the train-limit laws for the duration of the war. The I.C.C. ruling having been contested, the case has since been carried to the Supreme Court (as mentioned in an editorial note in *The Railway Gazette* of August 17); this court has decided that train-limit laws, whereby one State lays down restrictions on train lengths which exist in no other States, are obstructive to interstate train operation, have a serious effect on transport efficiency and economy, and are therefore unconstitutional. Further, danger is increased rather than reduced by this arbitrary limitation, for it requires more intensive use of tracks by the additional trains. This was a majority judgment, two justices dissenting.

Illinois Central New Refrigerator Van

A new type of bogie refrigerator van is under construction for the Illinois Central System, and will be notable by reason of a reduction in tare weight of about 14,000 lb. (6¼ tons) as compared with standard "reefers," as they are usually known in North America. The vehicles will be constructed of aluminium alloys and insulated with Fiberglas. Each will have built-in fans to ensure an effective cooling circulation of air from the floor through the ice-boxes to the ceiling, together with air ducts for the protective cooling of the side walls and for better distribution of the cooled air over and around the load. The ice-boxes will be of a collapsible type, and, by folding back into the end walls when it is necessary to use the wagon for other purposes, will increase the internal length of the body from 33 ft. to 39 ft. To improve smoothness of riding, longer springs will be used, with stabilisers built into the bogie bolsters. The floor racks of the new wagons will be of aluminium instead of wood, which will have advantages in increased cleanliness and non-retention of odours when foodstuffs have been handled.

In winter, when the wagons are being used to handle freight which requires protection against cold, steam heat will be in operation, and the fans will be used to secure even distribution of the warm air throughout the wagon body. Double thermometers will be provided on the outside of each wagon, to show the inside

temperature at both the upper and lower levels of the wagon interior. Plans for the refrigeration have been worked out in conjunction with the Refrigerator Car Committee of the United Fresh Fruit & Vegetable Association; and collaboration in the building and testing of the wagon is being given by the Aluminium Company of America and the Car Construction Committee of the Association of American Railroads.

EIRE

Railway Passenger Travel

The issue of return tickets, which was discontinued early last year, after a serious crisis as to supplies and quality of fuel had obliged the Irish Transport Company drastically to reduce its services, has been restored. Travel will be much more comfortable and convenient this winter than last, with the holiday season at an end and services operating on six days a week.

Notwithstanding a considerable reduction in the services, more than 28 million passengers were carried by trains during the last four years.

Road Passenger Traffic

The difficulties of road travel are not likely to be relieved for some little time, with the continued shortage of vehicles, rubber and fuel. The handicaps under which it is operating will be the better appreciated when it is realised that the bus fleet serving provincial routes has declined in strength from 252 to 165 vehicles in operation. The number of miles which the fleet has been permitted to cover has fallen from 12 million in 1940 to 6½ million in 1944. On the Dublin City services, the decline in fleet strength has been more than 10 per cent. and the drop in mileage, 7 million. Concurrently, and principally because of the cuts in train services, the demands of road passenger traffic increased to a point at which the services were unable fully to cope with it, and the unrelieved strain on vehicles greatly increased the rate of wear and tear. Many of the vehicles now maintaining service throughout the country have outlived their normal life and will need to be replaced at the earliest opportunity.

The effect of the emergency strain on transport employees has been reflected in a serious increase in the incidence of illness and loss of working hours. During the last 12 months the loss of manpower through illness has been far greater than in any previous year. Long hours and heavy traffic have combined to produce conditions which have imposed a heavy toll of sickness.

FRANCE

French Control of Railways

The Allied military command in France has returned control of all railway lines to the French authorites. Soon after D-Day the organisation of military traffic on the French lines was taken over by an Inter-Allied Commission under an agreement between General Dwight D. Eisenhower, the Supreme Commander, and General Koenig, Military Governor of Paris, acting on behalf of the French. This commission continued to sit in Paris from September, 1944, but the original arrangement has been replaced by an agreement with the French National Railways Company (S.N.C.F.), signed by M. René Mayer, the Minister of Public Works & Transport.

This agreement provides that the working and upkeep of the French railways throughout the national territory shall be assured in future by the French administration. Accordingly, the French are now again entirely responsible for all lines, whereas formerly a distinction was made between lines under Allied military control and lines under purely French management. Under the agreement the French will also control the lines in the zone occupied by French troops in Germany.

Inter-Allied Commission Continues in Paris

The Inter-Allied Commission, however, will continue to sit in Paris. It comprises three French, two American, and one British member. The Chairman of the commission was an American officer, but is now a French member, designated by Mr. Rene Mayer. The agreement also settles the question of traffic priority. Food supply trains for the French civilian population in general are to have priority over Allied military food supply and troop trains. Technical planning and the carrying out of American redeployment movements are provided for in the agreement, so that the French railway authorities will take a large part in the demobilisation movements of French troops for months to come.

French Hospital Trains

During the Allied advance after D-Day, the French authorities, at the request of the Americans, built and equipped twenty-three hospital trains for the use of the American Army. The first order given by the Americans was placed on October 22, 1944, and the first ten trains were ready for delivery by the end of January. In consequence of the casualties suffered by the American forces when the Germans broke through in the Ardennes, and in anticipation of further requirements in the final Allied offensive, additional trains were ordered. When the war in Europe ended, the trains were gradually returned to the French and the last eight were handed over to the French government by the middle of August, 1945.

Goods Traffic Increase

Civilian goods traffic in France continues to increase. Much progress was made during this summer, because of growing industrial activity and large imports from America and other countries. To avoid delay in goods traffic, the S.N.C.F. gave notice that from October 1 the time allowed for loading or unloading wagons would be reduced to half a working day, so that the number of wagons available could be used to the utmost. The total of wagons loaded by the S.N.C.F. during the week August 18 to 24, 1945, was 176,466, the highest figure since the liberation. Compared with 72,316, the figure for the week October 28, 1944, to November 3, 1944, the increase is more than 140 per cent. The present total is about 65 per cent. of the corresponding figure in 1939.

It is estimated that 285,000 wagons will be the total available by the end of the year. This will give scope for further increase in trade activity. especially as the need of military transport by the Allies is diminishing. By December, 1944, there were 144,000 wagons in running order. By February, 1945, the total exceeded 200,000, and by the middle of May it had risen to 240,000. Before the end of this year, the S.N.C.F. expects to receive 10,000 English and 13,000 American wagons, while it will also take over 2,400 German wagons, which were ordered by the Germans in France, and will repair 20,000 German wagons damaged in the war. Not only will the S.N.C.F. thus obtain more than 25,000 wagons in good condition, but also it may count on a further supply of 25,000 wagons from America during 1946.

French Locomotives Built in America

The French park of locomotives is growing, too, and official figures place the total available by the end of the year at 7,000. Orders for 700 locomotives of the Mikado type were placed in the United States some months ago for delivery to begin in September. Built to French plans, the engines are known as the 141 Liberation pattern and are designed to haul goods trains of 1,400 *tonnes*, or heavy expresses of 800 *tonnes* at a speed of 65 m.p.h. The first of these engines was given a trial run in the Lima Locomotive yards at the end of July before shipment to France. Delivery at the rate of 150 a month is expected in November and December, and by the end of February, 1946, the order may be completed. Negotiations were also reported in progress for 640 locomotives of a similar type.

Contracts for 100 diesel-electric locomotives were placed in America this year and delivery of the first 30 is expected in January, 1946.

The viaduct of Eauplet, over which passes the line from Paris to Rouen, has been provisionally restored and re-opened to traffic. It was destroyed during the bombing of Rouen about a week before D-Day. A rail-car service twice daily will do the run from Paris to Rouen in two hours.

HOLLAND

Railway Restoration

The disruption of the Dutch railway system by the Germans is still proving a serious handicap in the reconstruction of the country. Of the 30,000 goods wagons owned by the Dutch railways before the war, fewer than 1,000 are available, and of 2,000 carriages, the Germans took away about 1,750. Holland had some 300 electric trains before the war, and of these only 85 have been recovered, and only five are in serviceable condition. Of the 57 modern high-speed diesel trains operating in Holland before the war, only one has been recovered intact, twenty were found heavily damaged, while the remaining 36 had been sent by the Germans to Roumania. Finally, out of the 850 steam locomotives in the country in May, 1940, only 185 remain.

The Dutch railways have done their best to alleviate the position and have the support of the Allies. From the U.K. and the U.S.A. 200 locomotives were obtained on loan, and 50 were ordered in Sweden by the Dutch Government while still in London. The execution of this order has been delayed considerably through the prolonged strike in the Swedish engineering industry, and the first two of these locomotives were delivered only recently. The Belgian railways placed some 3,000 goods wagons at the disposal of the Dutch railways. The Dutch Government has been endeavouring to obtain the return to Holland of the steam locomotives and rolling stock transferred to Germany during the occupation. An agreement with the Allies to effect this has not, however, yet been reached.

SWEDEN

Private Railways' Results

Combined working receipts of the Swedish privately-owned railways for the first eight months of 1944 amounted to kr. 106,500,000, compared with kr. 106,700,000 for the same period of 1943. Combined working expenditure was kr. 80,300,000 (kr. 76,900,000). There resulted, therefore, a reduced working surplus of kr. 26,200,000 (kr. 29,800,000) for the period. The combined net profit amounted to kr. 10,800,000 (kr. 15,100,000) for the eight months.

A Classic Locomotive Front-End Research

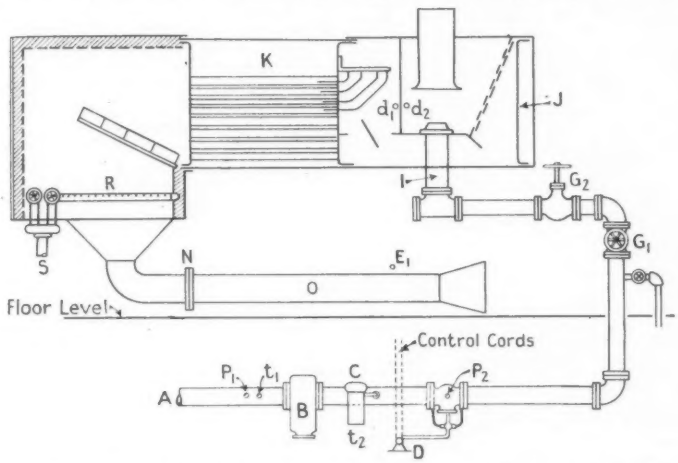
Conducted by the Engineering Experiment Station of the University of Illinois

By E. L. Diamond, M.Sc.(Eng.), A.M.I.Mech.E.

IT would appear from the recently-published discussion on Mr. D. W. Sanford's paper* that locomotive engineers in this country are not generally familiar with the masterly and comprehensive research on the locomotive front-end, carried out at the Engineering Experiment Station of the University of Illinois, the results of which were published in 1933. Many of the points which were the subject of speculation during the recent discussion were studied experimentally in that research, and as no account of it appears to have been published in this country, a brief review of its scope and method, and the principal conclusions reached, may be of value.

The research was carried out on a quarter scale model front-end, complete with boiler tubes and firebox. The arrangement closely reproduced the front-end of the "L1" and "K4" class locomotives on the Pennsylvania Railroad, tested at Altoona, which afforded a check on the validity of the results, as deduced from theoretical considerations of similarity. The work was done by a team under the direction of Professors Edward C. Schmidt and Everett G. Young; the general conception was due to Professor Schmidt.

The report opens with a lengthy summary of previous work on the subject, commencing with that of the great British pioneer D. K. Clark, and contributed to by such well-known engineers as Zeuner, von Borries, Sauvage, Strahl, Legein, and Goss. Much of this work was theoretical, and has frequently been used as the basis for smokebox studies in this country; but it is surprising how much investigation already had been carried out, both on models and on full-size locomotives. Generally, these investigators were agreed that the exhaust jet operates by friction and mixture with the surrounding gases. None brought forward any evidence to support the theory of piston action by successive impulses; there was general acknowledgment, by statement or inference, that it is immaterial whether the jet consists of a steady flow or pulsations. Naturally, their work was directed primarily to finding the best relationship of the principal dimensional factors; and here there was considerable disagreement, amply justifying the extended programme of investigation undertaken at Illinois.



A—steam line from power plant.
B—separator.
C—throttling calorimeter.
D—reducing valve and control cords to operator's station.
G1 and G2—pressure control valves.
I—exhaust stand.
J—smokebox front.
K—boiler shell.
N—choke.
O—air duct.
E1—differential draught gauge.
P1, P2—points at which pressure was observed.
t1, t2—points at which temperature was observed.
d1, d2—points at which draught was observed.
S—gas and air supply for heater.

Fig. 1—Arrangement of test model in final form

Fig. 1 shows the arrangement of the Illinois test model in its final form, and is self-explanatory. A pulsator valve was originally incorporated, but afterwards omitted, when it was thoroughly established that pulsating flow had no measureable effect on the relationship between steam flow and air flow for each set-up and that the average pressure of a pulsating jet produced the same discharge as a steady pressure of the same amount.

The first main division of the programme of research was a series of test results for various front-end arrangements, beginning with sets of nozzles of different types and dimensions, and proceeding to chimney arrangements. Fig. 2 shows the standardised method adopted for presenting the data, and a summarised comparison of the various chimney and nozzle arrangements. The upper graph shows the discharge characteristic of the nozzle, that is steam flow in terms of back pressure. The lower graph on the right shows the effectiveness of the front-end arrangement in terms of air flow (which is throughout used as the criterion, in preference to draught) on a basis of back pressure. The lower graph on the left combines these two, and gives the characteristic coefficient W_a/W_s of the arrangement, that is, air flow divided by steam flow, weight for weight. It will be noticed that the maximum divergence between any of the curves is not great. This accounts for the lack of agreement in previous work. There is no shape of nozzle, nor combination of ratios, which will give very outstanding results; and very careful control of the experimental conditions is necessary to establish reliable coefficients. This requirement was certainly fulfilled for the first time in the Illinois tests.

It would be impossible in any brief summary of this kind (the original report covers 179 pages) to go into details as to the respective merits of particular types of nozzle or chimney, and it must suffice generally to show that there was less difference between them than might be expected. Nozzles in which the jet was

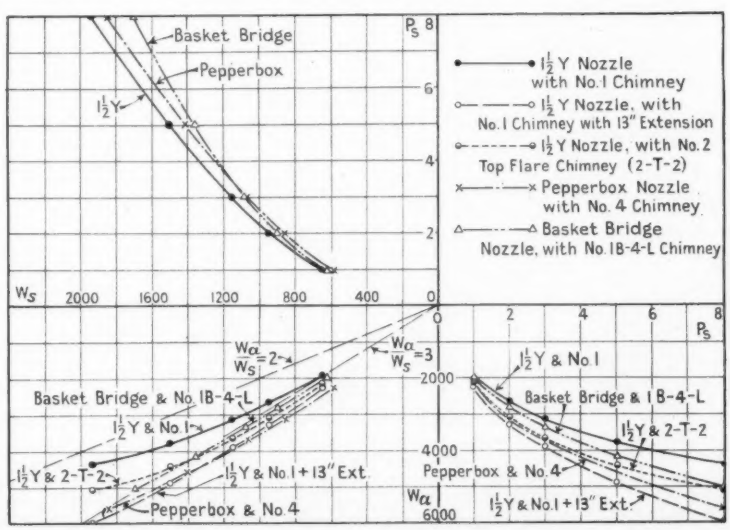


Fig. 2—Comparison of various chimney and nozzle arrangements

* "The Relationship Between Smokebox and Boiler Proportions," an abridged report of which was published in our December 22, 1944, issue, and a summary of the discussion in our February 12 issue

divided generally gave good results. It will, however, be of particular interest in the light of the discussion on Mr. Sanford's paper to mention that an increase in the diameter of the chimney produced an improved performance with any practicable nozzle, and that the best ratio for the chimney diameter was 3·5 nozzle diameters. The best performance produced by a straight chimney was improved by the use of a tapered chimney of slightly smaller base diameter. The distance between the bottom of the chimney and the nozzle had little effect, the controlling factors being the diameter of the chimney and the distance to the top. The use of a flared base, however, proved advantageous, provided consideration was given to ease of entry of the gases.

The research then went on to investigate the effect of the temperature of the gases or air being drawn through the boiler. The tests so far considered were carried out with cold air. The heat was derived from a gas flame at the firebox end, so providing actual products of combustion. Apart from the anticipated fact that increase of temperature reduces the gas or air flow, no effect on the relative validity of the results obtained with cold air could be discerned. The effect of humidity, studied by introducing a fine stream of water into the air flow, was less than could be measured. It was also found that the effect of varying the steam temperature of the jet was unimportant. A test with a choked resistance to the air flow at the firebox end showed the importance of using air flow, and not draught, as a basis, for a decrease in the resistance to air flow results in the movement of a greater weight of air, and the production of a smaller draught.

The final stages of the research comprised explorations of the movement of the air in the smokebox, and of the temperature, velocity, and pressure distribution within the jet. The exploration of the smokebox was carried out by the simple, but very effective, method of injecting a small stream of water from a nozzle about the size of a medicine dropper, which could be placed anywhere in the smokebox. This showed a surprisingly large proportion of inert space, where the drops of water fell vertically. Droplets released within a few inches of the steam jet were either drawn directly into the jet or were deflected and carried with the air current almost vertically.

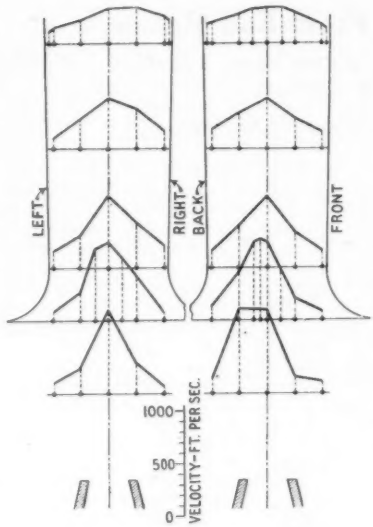


Fig. 3—Chimney velocity exploration

The exploration of the jet itself involved considerable problems of technique, and was ultimately effected by an exploring device consisting of two monel-metal tubes 0·06 in. diameter, and a thermocouple, and the whole taped into a small streamlined bundle less than $\frac{1}{8}$ in. in diameter, jacketed in a $\frac{1}{8}$-in. pipe. One of the tubes measured the dynamic pressure, and the other the static pressure (vacuum). By this means the distribution of temperature, vacuum, and velocity in both horizonal and vertical planes was plotted. Fig. 3 shows a typical distribution in the vertical plane. It also shows a characteristic feature shown by this portion of the investigation, namely, a tendency of the jet to bend backwards—a feature that was present with every combination of nozzle and chimney. It is due to the more rapid mixing of the front surface of the jet, where, in the smokebox arrangement used, the air flow impinged through the front netting, there being a diaphragm between the jet and the tube plate. The mixing effect tends to reduce temperature, vacuum and velocity on the front of the jet.

The data acquired by the exploration of the jet also enabled the proportions of the total air ejected, which was mixed with the jet at various heights, to be estimated. The most active region was found to be between the chimney choke and the level of contact of the jet with the chimney wall, 55 per cent. of the total air being forced into the jet in this zone, 4 in. in height. An estimate was also made of the percentages of the total mechanical energy in the steam emerging from the nozzle dissipated in various ways. The energy ejected at the top of the chimney was 59·5 per cent.; 22·1 per cent. was estimated to be lost in collision and acceleration; 4·7 per cent. was given up to the air at the base of the chimney; and 13.7 per cent. was lost in traversing the chimney. It is not easy to determine what proportion of this may be regarded as useful work, and the heat energy in the jet is completely neglected, as it appears to play only an incidental part. As significant a factor as any is the estimate of the relative proportions of the energy ejected from the chimney in the steam and the air, 3,750 and 197 ft.-lb. respectively, corresponding to average velocities of 490 ft. per sec., and 68 ft. per sec. The assumption of complete mixture or uniform velocity at exit from the chimney was thus shown to be untenable.

This important investigation affords ample scope for the study of particular smokebox arrangements, which the Illinois workers consider may well be done by standing tests on actual locomotives, with steam supplied by blocking the piston valves open. One comment the writer offers is that there is some danger in regarding the coefficient W_a/W_s as an absolute criterion of merit. The reduction of back pressure reduces the quantity of steam required for a given engine power, and hence the air flow necessary to maintain the steam supply. It will not be advantageous to achieve an improvement in the coefficient W_a/W_s at the expense of increasing the back pressure, as was shown to be possible in some cases, unless the locomotive concerned steams badly.

The Arlberg Express Runs Again

Distinguished French personages accompany the train

On Friday, September 21, at 6.40 a.m., punctually to the minute, after a lapse of six years, the first through train Paris-Basle-Buchs-Innsbruck, that is the Arlberg Express, arrived in the Alsace Station in Basle, which had been decorated for the occasion. The train left the French capital on Thursday, September 20, at 7.15 p.m., consisting of two sleeping cars, a restaurant car, and seven other vehicles. It was accompanied by the French Minister of Transport, M. René Mayer; Generals Blanc and Bérgères; M. Fournier, the President of the Board of Management of the French State Railways; M. Goursat, General Manager of the S.N.C.F.; M. Narps, Manager of the Eastern District; and M. Boyau, Manager of the Commercial Department; with a number of other high French officials. Not least among the numerous passengers travelling from Paris to Basle was the Swiss Minister in Paris, Dr. Burckhardt. To receive them in Basle were M. Cottier, the Head of the Commercial Department, Divisional Chief Dr. Kunz, and M. W. Tribelhorn, Deputy Chief Operating Superintendent of the Swiss Federal Railways, as well as Director Rouge of the International Sleeping Car Company. After the exchange of official greetings, the train left at 8.48 a.m. for Innsbruck, where it was due to arrive at 4.25 p.m. There were also official celebrations in Innsbruck, to mark the reopening of the direct Arlberg service.

The Arlberg Express will run every Tuesday, Wednesday, and Friday between Paris and Innsbruck, leaving Paris at 7.15 p.m. arriving at Basle 6.40 a.m., leaving again at 8.48 a.m., and reaching Buchs at 12.53 p.m. It leaves there again after a short stop and reaches Innsbruck at 4.25 p.m. In opposite direction the times are: leave Innsbruck 8.45 a.m., arrive at Buchs 12.15 p.m., leave 1.11 p.m., arrive Basle 4.48 p.m., leave 7.45 p.m., arrive Paris Est 6.50 a.m.

EXPORT OF GOVERNMENT SURPLUS MACHINE TOOLS.—It has been a condition of the Government's machine tool disposal scheme that Government surplus machine tools are not exported. The object of this has been to give British industry a first chance to re-equip with the best surplus tools. The Machine Tool Control now announces that, as from November 1, Government surplus used and unused machine tools, which have been on offer to British industry through the disposal scheme for four months, are available for export. Details of these machines will continue to be available in the records at the disposal centres and they will be available for purchase by merchants or others engaged in the export trade. The restriction on the export of tools acquired under Lend-Lease remains in force.

Russian Locomotives in Berlin

Temporary change of gauge from 4 ft. 8½ in. to 5 ft. enabled Russian trains to work as far west as Potsdam

(See illustrations, page 422)

THE photographs which we reproduce on p. 422 show that the Russians temporarily converted the gauge of at least one main line from their own original frontier through Poland to Berlin and Potsdam. The conversion was made for military reasons, and continued until after the Three Power Conference; late in September the gauge was reconverted to 4 ft. 8½ in. These photographs, which we have received from Mr. W. Dendy, show the 0-10-0 steam locomotive and the C_o-C_o diesel-electric locomotive (the latter with some typically Russian rolling stock) which hauled to Berlin the special train from Moscow carrying Generalissimo Stalin and his staff to the Three Power Conference. The special train (not shown) consisted of ten modern Russian coaches, some of which were painted dark blue and the remainder light green, with a converted German coach fitted with wireless aerials at the rear. The 0-10-0 steam locomotive was used as a pilot to the diesel.

The steam locomotive, No. 3-1387, has the characteristic Russian railed platform round the front end, entered from doors on both sides of the cab. Comparison of the locomotive with the figures on the ground shows clearly the height of the Russian construction gauge (about 17 ft.) and while the overbridges on much of the Polish territory, in view of the extent of the Russian occupation up to the 1914-1919 war, doubtless allowed plenty of headroom, it would be interesting to know how a locomotive of this height could be worked over the German lines without meeting overhead obstructions. Our correspondent calls attention to the portrait of Stalin above the buffer-beam of the engine, and the name of the engine class in Russian characters on the smokebox under the upper headlamp. The engine is painted in ultramarine blue, with lining, figures, and lettering in white; the buffer-beam is scarlet, as also the Soviet flag painted on both sides of the tender, and the Soviet red star appears on the cylinder casings and the cab-sides. The only other blue locomotive seen in Berlin was a German 2-10-0 which had been taken over by the Russians; all the rest of the Russian stock, chiefly tender 0-10-0 locomotives of the same type as No. 3-1387, was painted in black, with red buffer-beams, the red star on smokebox, cylinder and cab-sides, and the red flag on the tender.

The diesel locomotive appears to be one of the standard United States 1,000 b.h.p. designs, except that it is mounted on six-wheel instead of four-wheel bogies. This arrangement has doubtless been necessary for distribution of weight, as the American eight-wheel locomotives weigh about 107 tons, and so impose a weight of some 27 tons on each axle. This locomotive is numbered D-20-27, and is painted black, with the lettering and Russian emblems picked out in red and white. Two similar diesels were seen by our correspondent in the Berlin area. On several double lines in the Russian-occupied zone one track has been completely removed, presumably to provide material for repairs, or as reparations. But the Russians have restored the ring railways round Berlin, and electric trains are operating once again in the Grünewald and Charlottenburg districts. All the main stations, except the Lehrter and the north end of the Alexanderplatz Station, appeared to be out of commission by reason of damage.

New Glass for Charing Cross Station Roof, S.R.

View across the River Thames taken from the south end of Charing Cross Station roof showing (in foreground) painters preparing the glazing bars for the new glass, 130,000 sq. ft. of which will be required to replace that broken by air raids

Russian Locomotives in Berlin

(See article on page 421)

U.S.S.R. 0-10-0 locomotive No. 3-1387 on 5-ft. gauge track at Potsdam, Germany, after hauling the Stalin special train

U.S.S.R. railways diesel-electric locomotive at Potsdam, Germany, with Russian coaching stock, running on the 5-ft. gauge

B.L.A. leave train at Gennep, Holland, hauled by W.D. austerity 2-8-0 No. 78524, with Belgian all-steel coaching stock

Netherlands Railways four-car diesel-electric train at Nijmegen, Holland, in March, 1945

RAILWAY NEWS SECTION

PERSONAL

Lt.-Colonel E. W. Slaughter, Managing Director of the Nizam's State Railway, is at present in England.

The resignation is announced of Mr. Oliver R. H. Bury from the board of the Peruvian Corporation Limited, of which he was Chairman & Managing Director. Viscount Suirdale and Mr. Louis H. Kiek, who are already Directors, have been elected Chairman and Deputy-Chairman, respectively.

The United Steel Companies Limited announce that Mr. A. G. Stewart and Mr. W. S. Morrison, M.P., have joined the board. Mr. Stewart recently was elected Chairman & General Managing Director of Stewarts and Lloyds Limited. Mr. Morrison was Minister for Town & Country Planning in the Coalition Government.

Mr. R. H. Jeffrey has resigned from the board of the El Oro Mining & Railway Co. Ltd., and Lord Boston has been appointed in his place.

The following announcement appears in the Supplement to *The London Gazette*, dated October 16, under the heading of Territorial Army—Royal Engineers: Engineer & Railway Staff Corps:—

Lt.-Colonel G. Mills (64169) resigns his commission, October 17, 1945, retaining the rank of Lt.-Colonel.

Colonel Mills recently retired from the position of Divisional General Manager, Southern Area, L.N.E.R.

Mr. C. A. F. Hastilow has been released from his appointment as Director of Paint Materials in the Raw Materials Department, Ministry of Supply, to return to industry. Mr. G. Gillies Shuck, Assistant Director of Paint Materials, will be in charge of the Directorate. Mr. Hastilow has returned to the post, which he occupied before going to the Ministry, of General Manager of Docker Brothers, Birmingham.

Sir Claude D. Gibb has been appointed Deputy-Chairman of A. Reyrolle & Co. Ltd.

Colonial Railway Appointments

Mr. D. C. Woodward, Senior Traffic Assistant, Nigerian Railway, to be Chief Traffic Superintendent, Nigerian Railway.

Mr. A. Bradshaw, Assistant Traffic Superintendent, Gold Coast Government Railway, to be Senior Assistant Traffic Superintendent, Tanganyika Government Railways.

Mr. A. M. Conradie, Government Law Adviser, Department of Justice, Pretoria, has been appointed Chief Legal Officer, General Manager's Office, Johannesburg, South African Railways & Harbours.

Brigadier Arthur Levesley has been appointed General Manager of the Steel Foundry and ancillary departments of Edgar Allen & Co. Ltd.

Professor Andrew Robertson

President, Institution of Mechanical Engineers, for 1945-46

Professor Andrew Robertson, D.Sc., Wh.Ex., M.Inst.C.E., M.I.Mech.E., F.R.S., Principal of Merchant Venturers' Technical College, Bristol, and Professor of Mechanical Engineering at Bristol University, who is President of the Institution of Mechanical Engineers for 1945-46, served his apprenticeship with James Robertson & Sons (Fleetwood) Ltd. He obtained a Lancashire County Council Ashbury Scholarship, a Whitworth Exhibition, and a Fairbairn Prize, and in 1905 graduated in the University of Manchester with first class honours. After further practical experience with James Robertson & Sons, he returned to Manchester University in 1908 as Demonstrator in Engineering, and in 1912 became a Vulcan Fellow of the University. In 1915 he joined the engine section of the Air Department of the Admiralty as Lieutenant, R.N.V.R., and in 1918 became Officer in Charge of Mechanical Testing at the Royal Aircraft Establishment, and was promoted Lt.-Commander. Afterwards he became Major (Technical), R.A.F. Professor Robertson was appointed to the Chair of Mechanical Engineering at Bristol in 1919, and in 1924 he was appointed also Principal of the Merchant Venturers' Technical College, in which the faculty of engineering of the University is conducted. Professor Robertson has contributed many accounts of his researches to published mechanical-engineering knowledge. These have dealt mainly with materials and structures and have included the testing of timber, glue, rubber and other materials of construction for aircraft and aeroplane engines. He has published several papers on the strength of tubular and other struts, for one of which he was awarded in 1925 the Telford Gold Medal of the Institution of Civil Engineers. His special knowledge of these subjects has led to his appointment to a number of committees of the British Association and the Department of Scientific & Industrial Research, and in 1935 he was appointed a member of the Advisory Council of the latter. In 1941 he was appointed a member of the Engineering Advisory Committee, under the Chairmanship of Lord Hankey, constituted to advise the Government on engineering questions connected with the war. Professor Robertson was Honorary Secretary of the Western Branch of the Institution of Mechanical Engineers from its formation in 1924 until 1929. In 1931 he was elected Chairman of the branch, and was a Member of Council for that year. In 1938 he was elected Member of Council, and in 1941, Vice-President.

Sir William Henry Ellis, Director of the Sheffield & South Yorkshire Navigation Company, and formerly Managing Director of John Brown & Co., left £149,301. He has directed that one-seventeenth of the residue of his estate is to go to the Benevolent Fund of the Institution of Civil Engineers, subject to a life interest to his son, Ernest.

Mr. H. G. Richards, at his own request, has resigned from the Secretaryship of Tube Investments Limited, on reaching the retirement age. He had been Secretary since the formation of the company in 1919. Mr. A. B. Innes Dick has been appointed Secretary.

South African Railways & Harbours Service Commission

The term of office of Mr. W. A. J. Day as Acting Chairman of the S.A.R.H. Service Commission has expired and the following appointments have been made:—

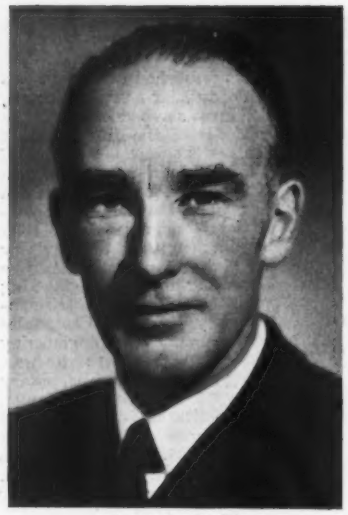
Mr. J. H. Stewart, Member, S.A.R.H. Service Commission, to be Chairman, S.A.R.H. Service Commission, Pretoria.

Mr. C. A. Bambury, Controller of Ship Repairs, Cape Town, to be Member, S.A.R.H. Service Commission, Pretoria.

We regret to record the death of Mr. Bernard E. O'Hagan, Electrical Engineer to the Union Switch & Signal Company, aged 51.

Mr. David Blee, M.Inst.T., Assistant to Chief Goods Manager, Great Western Railway, who, as recorded in our October 5 issue, has been appointed Principal Assistant to Chief Goods Manager, joined the company in 1916. After a break of two years with H.M. Forces, he gained valuable experience of all phases of the administrative work of the department as secretary successively to the Rates Manager (the late Mr. F. B. Mortimore) and to two former Chief Goods Managers (the late Mr. E. Ford and Mr. A. Maynard). He gained academic distinctions at the London School of Economics in Railway Law, Railway Commercial & Operating Economics and in Railway Statistics. He has occupied suc-

No. 78524, with Belgian all-steel coaching stock built by W.D. austerity 2-8-0 Netherlands Railways four-car diesel-electric train at Nijmegen, Holland, in March, 1945



Mr. David Blee

Appointed Principal Assistant to Chief Goods Manager, G.W.R.

cessive posts as Goods Agent, Slough; Acting Chief Clerk, Exeter District; Assistant London District Goods Manager; and District Goods Manager in turn of the Shrewsbury, Liverpool and Birmingham & South Staffordshire Districts. He was a lecturer in Railway Salesmanship and an active member of the G.W.R. London and Birmingham Debating Societies. Mr. Blee has been a member of the Shrewsbury, Liverpool and Birmingham Chambers of Commerce; Liverpool, Manchester and Birmingham & South Staffordshire Inter-Railway Conferences; Liverpool Port Emergency Committee; Dee Catchment Board; Midland Regional Canal Conference; West Midland Regional Road-Rail Conference; Employers' Panel, Ministry of Labour; and Railway Liaison Officer to various Government departments. He was appointed Assistant to Chief Goods Manager in October, 1942, with special duties which have included a reorganisation of the company's road transport.

Mr. G. Cornish, General Assistant to Chief Goods Manager, Great Western Railway, who, as recorded in our October 5 issue, has been appointed General & Staff Assistant to Chief Goods Manager, entered the company's service in the Chief Goods Manager's Office, and, after gaining experience at a number of stations in the London Area, returned to that office to take up an appointment in the Staff Section, of which he took control in 1926. He subsequently became Goods Agent at Oxford and South Lambeth; and Goods Superintendent at Bristol. In 1936 he was appointed District Goods Manager at Liverpool. He was a member of the Liverpool Chamber of Commerce, and the Liverpool & District and the Manchester & District Conferences. He was also a member of the Dee Conservancy Board and subsequently of the Dee Catchment Board, on the reconstitution of that body. In 1940 Mr. Cornish was appointed District Goods Manager at Birmingham, where he was a member of the council of the Chamber of Commerce, the Birmingham & South Staffordshire Conference and the Road-Rail Panel for the Midland Area and the Midland Regional Canal Conference. He was also Liaison Officer for several Government departments which were established early in the war. In 1941 he returned to London to become General Assistant to the Chief Goods Manager, where he has been closely associated with the movement of traffic to and from British and American depots and the ports. Mr. Cornish also has been a member of an inter-company committee set up to deal with post-war problems at Liverpool, Manchester, Birmingham, London and other parts of the country. To these duties he now adds that of all staff matters related to the Goods Department.

Mr. G. Cornish

Appointed General & Staff Assistant to Chief Goods Manager, G.W.R.

Mr. A. C. B. Pickford, A.M.Inst.T., District Goods Manager, Swansea, Great Western Railway, who, as recorded in our October 5 issue, has been appointed District Goods Manager, Cardiff, began his railway career in Cardiff in 1915. After experience at stations and district offices in South Wales, he was promoted to Paddington in the Chief Goods Manager's Staff Department in 1929. From 1930-33 Mr. Pickford was engaged on outdoor investigations covering general organisation subjects, goods shed working, and bonus arrangements. He was the Goods Department representative on the G.W.R.-L.M.S.R. Closer Working Investigating Committee. In 1933 he became personal clerk to the Chief Goods Manager and in 1934 was appointed Goods Agent, Slough. Early in 1937 he returned to Paddington as Outdoor Representative, Rates Department, and subsequently took charge of the Research Section. He was appointed Rates Assistant (Research) in 1941, and up to the time of his transfer to Swansea as Assistant District Goods Manager early in 1943 represented the G.W.R. on the Inter-Company Freight Rolling Stock Control and the Railway Liaison Committees with the Ministry of Food and Ministry of Supply. Later in 1943 he was appointed District Goods Manager, Swansea, and during his tenure of office he has been a member of the Port Emergency Committees at Swansea, Port

Mr. A. C. B. Pickford

Appointed District Goods Manager, Cardiff, G.W.R.

Mr. C. E. Shaw

Appointed District Goods Manager, Swansea, G.W.R.

Mr. E. Lake

Divisional Engineer, Plymouth, G.W.R., 1932-45

Talbot, Fishguard, and Milford Haven. Mr. Pickford has gained a number of awards under the company's educational facilities, including first place in both Railway Law and Railway Economics at Cardiff Technical College. In 1927 he passed the final examination of the Institute of Transport with a distinction. He is also a gold medallist of the G.W.R. London Lecture & Debating Society.

Mr. C. E. Shaw, District Goods Manager, Newport, Great Western Railway, who, as recorded in our October 5 issue, has been appointed District Goods Manager, Swansea, entered the service of the company in 1913 at Reading. With the exception of a period when he was serving with H.M. Forces during the war of 1914-18, he was employed at goods stations in the Reading District and in the Reading District Goods Manager's Office until 1926, when he was selected for a course of special training. On completion of the course in 1931, Mr. Shaw went to the Chief Goods Manager's Office, where he was given charge of the Statistical Section. Two years later he was appointed Junior Assistant to the District Goods Manager, Birmingham, and was the first member of the Goods Department staff to be selected for such an appointment. Shortly afterwards, Mr. Shaw was appointed Chief Clerk, Birmingham District Goods Manager's Office, and in 1938 further promotion came when he was made Assistant Goods Manager at Birmingham, which post he vacated at the beginning of 1944, to become Goods Superintendent, Hockley, and the Birmingham Goods Depots. He was appointed District Goods Manager, Newport, on July 1, 1944.

Mr. E. Lake, O.B.E. (Military Division), who, as recorded in our October 5 issue, is retiring on December 31, after 52 years' service with the company, from the position of Divisional Engineer, Plymouth, Great Western Railway, received his early training under the late Mr. T. H. Gibbons, M.Inst.C.E., Divisional Engineer, Plymouth, remaining on that division until 1915. During the war he served with the Royal Engineers, from May, 1915, to October, 1919, joining as Lieut. in the 116th Company, R.E. (G.W.R.), and later commanding the 265th Company from 1918, with the rank of Major, on the construction of the Palestine Railway. Mr. Lake was appointed Assistant with the Divisional Engineer at Shrewsbury, in November, 1920, and Assistant Divisional Engineer, Oswestry, June, 1922. After five years at Oswestry, he was appointed Assistant Divisional Engineer, Cardiff, in 1927, and Divisional Engineer, Plymouth, in 1932.

Mr. W. R. Herod, formerly Executive Vice-President of the International General Electric Co. Inc., has been elected President & Director. He succeeds Mr. Clark Minor, who is retiring after 20 years as President. Mr. Minor will continue as a Director of both the General Electric Company (of New York) and International General Electric Co. Inc., and as Chairman of the executive committee of the latter.

Captain Oliver Lyttelton, D.S.O., M.C., M.P., who, as announced in our October 5 issue, has succeeded Sir Felix Pole as Chairman of Associated Electrical Industries Limited, formerly was closely connected with the metal industry. At the time he joined the Government as President of the Board of Trade in 1940, he was Managing Director of the British Metal Corporation Limited and Chairman of Lightalloys Limited, British (Non-Ferrous) Mining Corporation Limited, London Tin Corporation Limited, and Chairman or director of many other similar companies. He was appointed a member of the Export Guarantees Advisory Council in 1934. He had been a controller of non-ferrous metals between 1939 and 1940, and in 1941 he was appointed Minister of State in Cairo. He became Minister of Production in 1942.

Captain Oliver Lyttelton

Appointed Chairman, Associated Electrical Industries Limited

Mr. R. White, M.C., District Locomotive Superintendent, Motherwell, L.M.S.R., who as recorded in our October 5 issue, has been appointed District Locomotive Superintendent, Polmadie, served an apprenticeship with the former Glasgow & South Western Railway, partly in the running sheds at Dumfries, and partly at the workshops and drawing office, Kilmarnock. He joined the London Scottish in 1914 and served with that regiment throughout the war, spending the years 1916-18 in France. He received a commission in 1915, attained the rank of Captain, and was decorated with the M.C. and Bar. In 1919 Mr. White re-entered the service of the G.S.W.R. in a supervisory capacity at Girvan. His subsequent appointments were: Assistant Locomotive Foreman, St. Enoch, 1920; District Locomotive Foreman, St. Enoch, 1922; Assistant to District Locomotive Superintendent, Polmadie, Corkerhill, St. Enoch, 1928; District Locomotive Foreman, Ayr, 1930; Assistant to Divisional Superintendent of Motive Power, Glasgow, 1935; and District Locomotive Superintendent, Saltley, February, 1939. In 1940, while at Saltley, he formed, and commanded until October, 1943, the 33rd Warwickshire (Birmingham) Railways Battalion, Home Guard. He was appointed District Locomotive Superintendent, Motherwell, in November, 1943.

The following announcement appears in the Supplement to *The London Gazette*, dated October 2, under the heading of Territorial Army—Royal Engineers: Engineer & Railway Staff Corps:—

Major A. H. McMurdo (68705), having attained the age limit, resigns his commission, October 3, 1945, retaining the rank of Major.

Major McMurdo recently retired from the position of Divisional Engineer (Scotland), L.M.S.R.

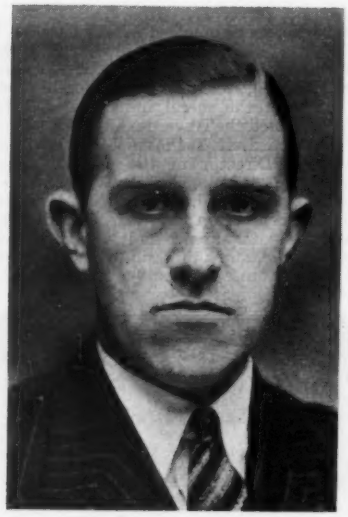
Colonel H. J. Wellingham, who has been Press Liaison Officer, Cable & Wireless Limited, since February, 1944, has been promoted Manager of London Branches. He will take over his new appointment on December 1, when (as recorded in our October 12 issue) Rear-Admiral George P. Thomson, who has been Director of the Press Censorship Division, Ministry of Information, during the war, joins Cable & Wireless Limited to undertake Press liaison duties.

Among awards recently made in recognition of gallant and distinguished services in North-West Europe is that of the O.B.E. (Military Division) to Lt.-Colonel (temporary) Cecil Preston Parker, M.C. (32519), Corps of Royal Engineers. Colonel Parker, who in 1939 was District Engineer, Cambridge, L.N.E.R., has been on military service since September of that year; he is now District Engineer, Hull, which position he took up, after demobilisation, on August 20 last.

Mr. F. J. Wymer, C.B.E., M.Inst.T., Assistant (Planning) to the General Manager, Southern Railway, who as recorded in our October 5 issue, has been appointed Assistant Docks & Marine Manager, was educated at Merton Court School, Sidcup, and Eltham College, Mottingham. During the war he enlisted in the Royal Horse Artillery in 1916, and subsequently was commissioned in the Royal Garrison Artillery and served in France and Germany, 1917-19. He was Captain and Adjutant when demobilised. In 1920 Mr. Wymer joined the S.E.C.R. as probationer and he was appointed to the Rolling Stock Section, Superintendent of the Line's Office, in 1923. In the next year he was transferred to the Trains Section of the London (East) Division, and to the Chief Operating Superintendent's Department in 1928. Mr. Wymer was appointed Assistant to the London (Central) Division Superintendent in 1930, and Assistant to the Traffic Manager for Special Work in 1931; he remained in the latter position

Mr. F. J. Wymer

Appointed Assistant Docks & Marine Manager, Southern Railway



Mr. G. Wynne Davies

Appointed Assistant Public Relations & Advertising Officer, Southern Railway

Mr. R. B. McColl

Elected Executive Vice-President, American Locomotive Company

until becoming Divisional Marine Manager, Dover & Folkestone, in 1934. At the end of March, 1938, he was appointed Assistant Continental Superintendent, and in January, 1942, he became Assistant (Planning) to the General Manager. Mr. Wymer was made a C.B.E. (Military Division) in the King's Birthday Honours of 1943 for his work in connection with the Southern Railway Home Guard.

Mr. G. Wynne Davies, O.B.E., Assistant Secretary, Southern Railway Company, who, as recorded in our October 5 issue, has been appointed Assistant Public Relations & Advertising Officer, was educated at Repton and at Clare College, Cambridge, where he obtained an M.A. degree. He entered the company's service in December, 1927, in the Chief Operating Superintendent's Office, and shortly afterwards was appointed a cadet. On January 1, 1932, he became Assistant to the Chief of the Road Transport Section of the General Manager's Office (afterwards Road Transport Liaison Officer). In 1935 Mr. Wynne Davies was made an Assistant to the London (East) Divisional Superintendent, and, on January 1, 1938, he returned to the General Manager's Office as General Purposes Officer. He was transferred to the Secretary's Office as a committee clerk on January 1, 1939, and was appointed Assistant Secretary as from January 1, 1943. Mr. Wynne Davies had held a commission in the Royal Engineers (Supplementary Reserve) before the war, and he served with the B.E.F. in France from September 4, 1939, to June 13, 1940. He was then with the Home Forces until September, 1942, when he joined Allied Force H.Q. He was on the staff of A.F.H.Q. and H.Q., Eighth Army, both in Africa and Italy, until September, 1945. He retired from the Army with the rank of Colonel. Mr. Wynne Davies was made an O.B.E. this year.

Mr. Robert B. McColl, M.I.Mech.E., Vice-President in charge of manufacturing, American Locomotive Company, who, as recorded in our October 19 issue, has been elected Executive Vice-President, was born at Kilmarnock, Scotland, and served an apprenticeship with the Glasgow & South Western Railway. After a period with Robert Stephenson & Co. Ltd., at Darlington, he went to the Montreal Locomotive Works in Canada, an affiliate of the American Locomotive Company. From 1919-21 he was General Manager of Sir W. G. Armstrong Whitworth & Co. Ltd. in London. He then went to the U.S.A. as Assistant Manager of the Schenectady Works of the American Locomotive Company. Mr. McColl has since been, successively, Manager of that plant, President of the Diesel Engine Manufacturing Division,

Mr. S. T. Clayton

Appointed Assistant to Operating Manager, (Motive Power), Glasgow, L.M.S.R.

Mr. J. W. Lamond

Appointed District Locomotive Superintendent, Motherwell, L.M.S.R.

Mr. W. W. Legg

A member of the Editorial Staff of *The Railway Gazette*, 1898-1945

President of the Alco Products Division and Vice-President in charge of manufacturing for the locomotive company. Mr. McColl is a brother of Mr. A. L. McColl, Chairman of the Superheater Co. Ltd. and of the Vacuum Oil Co. Ltd.

Mr. S. T. Clayton, District Locomotive Superintendent, Polmadie, L.M.S.R., who, as recorded in our October 5 issue, has been appointed Assistant to the Operating Manager (Motive Power), Glasgow, received his technical training at the Horwich Works of the former Lancashire & Yorkshire Railway, and at the Horwich Technical Institute. In 1917 he was appointed Foreman Fitter at Low Moor locomotive shed, and became Locomotive Shed Foreman at Sowerby Bridge in 1919, and Running Shed Foreman at Lower Darwen in 1920. He was appointed Assistant District Locomotive Superintendent at Carlisle (Midland Division, L.M.S.R.) in 1928. While in that post, he acted, from April to December, 1934, as Chairman of the Locomotive Operations Analysis Committee, Midland & Central Divisions. In 1935 he was transferred to Manchester as Assistant (Engine Utilisation & Accommodation) in the office of the Divisional Superintendent of Operation. He was appointed Assistant (Locomotive Maintenance Section) in the office of the Divisional Superintendent of Operation at Derby in 1937. In 1938 Mr. Clayton became District Locomotive Superintendent, Bank Hall, and in May, 1940, he was appointed District Locomotive Superintendent, Rugby. He became District Locomotive Superintendent, Polmadie, in 1943.

Mr. J. W. Lamond, Maintenance Assistant to Operating Manager (Motive Power), Glasgow, L.M.S.R., who, as recorded in our October 5 issue, has been appointed District Locomotive Superintendent, Motherwell, was trained in the Perth Workshops of the former Caledonian Railway, and was Leading Fitter and Night Foreman at Grangemouth before and after the amalgamation of the railways. After holding positions at St. Enoch and at Motherwell, he was made, in 1935, Locomotive Foreman at Inverness. Mr. Lamond was appointed District Locomotive Foreman, Greenock, in 1938, and Maintenance Assistant to Operating Manager, Glasgow, in 1939.

Mr. William Wickham Legg, M.A., Barrister-at-Law, is retiring at the end of this month after an association with the editorial staff of *The Railway Gazette* and its predecessor journals extending over 47 years. He was born on October 8, 1868, at West Farleigh, Kent, and was educated at Eton (King's Scholar) and Trinity College, Cambridge. He took the Classical and Law Triposes; B.A. in 1890; and M.A. in 1897. Mr. Legg was called to the Bar at the Inner Temple in 1893. He joined the staff of the weekly paper *Transport* in March, 1898, as an editorial assistant on the Legal and Parliamentary side, under the editorship of the late Mr. Charles H. Grinling, and later became an Assistant Editor. *Transport* was re-organised in 1904 under American auspices under the title of *Transport & Railroad Gazette*, but in 1905 the name of *The Railway Gazette* was adopted. The American interests in the publication, which had been in control from 1904, were bought out when the present proprietary company of Transport (1910) Limited was formed and took over as from the beginning of January, 1911. Continuing throughout this period as an Assistant Editor, Mr. Legg was elected a Director of Transport (1910) Limited in January, 1917, and later a Director of the subsidiary companies subsequently acquired. He was appointed an Associate Editor in April, 1942. He resigned from the board of Transport (1910) Limited in August, 1945, and from the boards of the subsidiary companies on September 11 last, but has retained the position of Associate Editor of *The Railway Gazette* until his retirement.

Sir John Rowland

Chief Railway Commissioner, Burma, 1937-41 and 1943-45; Director of Construction, Burma-China Railway, 1941-43

Sir John Edward Maurice Rowland, who as recorded in our August 17 issue, has relinquished his position as Chief Railway Commissioner, Burma, was born on April 30, 1882, was educated at Dulwich College, and gained his early engineering experience at workshops in Liverpool. In 1904 he was appointed an Assistant Engineer on the Burma Railways and, on arrival in Burma, was placed on construction work. After varied construction and open-line experience he was promoted to the rank of District Engineer in 1919, and ten years later became Deputy Chief Engineer. He officiated as Chief Engineer in 1933 and 1934, and was confirmed in that appointment in March, 1935. In February, 1935, he also officiated as Agent, which appointment was confirmed in the next October. When the separation of Burma from India took effect on April 1, 1937, autonomy was bestowed on the Burma Railways, and the Burma Railway Board was set up. The President of the board was officially termed the Chief Railway Commissioner, and the title of Agent was dropped. The term of service of Sir John Rowland as Chief Railway Commissioner, Burma, was extended until 1941; he proceeded on leave preparatory to retirement on February 27, 1941, but was recalled from Australia on June 27 of the same year to take up the post of Director of Construction, Burma-China Railway, which had been sanctioned by His Majesty's Government. He continued in the latter capacity until August, 1943, when he resumed his former duties on the transfer of the temporary incumbent, Mr. N. Johnson, to the Supply Department of the Government of India. Sir John Rowland had proceeded with the construction of the Burma-China Railway until less than a week before Lashio, his headquarters station, was captured by the Japanese; and, after many hardships, he reached Assam through the jungle paths of the Chaukkan Pass in a journey which took over three months. On reaching India he joined the Burma Railways headquarters at Simla, and proceeded with the preparation of his report on, and the closing of accounts of, the Burma-China Railway Construction; and on resumption as Chief Railway Commissioner, Burma, he was responsible for the plans for the rehabilitation of the Burma Railways against the return of the civil administration to Burma. He was also a member of many of the technical and non-technical committees which have sat in Simla to consider the various aspects of the reconstruction of the departments of the Government of Burma. On July 31 last he relinquished office to proceed to Australia on two years' leave, preparatory to retirement. Sir John Rowland was knighted in 1941.

Imperial Chemical Industries Limited

Mr. F. E. Smith and Mr. J. L. S. Steel have been appointed Directors of Imperial Chemical Industries Limited.

Mr. W. M. Inman, formerly Sales Controller of I.C.I., has been appointed Chairman of the I.C.I. Alkali Division in place of Mr. J. L. S. Steel. Mr. E. M. Fraser has been appointed Sales Controller of I.C.I.

Mr. A. T. S. Zealley has been appointed Chairman of the I.C.I. Billingham Division and Mr. V. St. J. Killery becomes Chairman of the I.C.I. General Chemicals Division. Mr. S. A. H. Whetmore has been appointed Managing Director of the Billingham Division jointly with Mr. K. Gordon.

Mr. E. S. Shrapnell-Smith, who in 1943 accepted for the time being Chairmanship of Eastwoods Limited, is resigning in favour of Mr. Sidney Garcke, but remains a Director and retains his Chairmanship of Eastwoods Flettons Limited, Eastwoods Cement Limited, Eastwoods Lewes Cement Limited, and Eastwoods Humber Cement Limited. Mr. Shrapnell-Smith is a Director of the Aldershot & District Traction Co. Ltd. and East Kent Road Car Co. Ltd.

Mr. Garcke is Chairman of the Aldershot & District Traction Co. Ltd., Devon General Omnibus & Touring Co. Ltd., East Kent Road Car Co. Ltd., Maidstone & District Motor Services Limited, and Southdown Motor Services Limited.

We regret to record the death, at the age of 60, of the well-known American signal engineer, Mr. Harold McCready, District Manager at New York for the Union Switch & Signal Company. He contributed frequently to the technical press at one time.

The late Sir William James Thomas, Bt., who was a Director of the Great Western Railway Company from 1923 until his retirement from the board in December, 1943, and formerly a Director of the Barry Railway Company, left £645,773.

Mr. F. L. Creswell, M.C., M.Inst.C.E., who, as recorded in our August 17 issue, has retired from the position of Chief of the Engineering Department, Buenos Ayres Great Southern and Buenos Ayres Western Railways, completed his technical training at the City & Guilds Central Technical College. He joined the Buenos Ayres Western Railway in 1906. During the war of 1914-18 Mr. Creswell served for over four years in the Royal Garrison Artillery; he attained the rank of Major and was awarded the Military Cross and the Belgian decorations of the Ordre de la Couronne and Croix de Guerre. On returning to Argentina in 1919 he was appointed Assistant Engineer-in-Chief, B.A.W.R., which post he held until September, 1929, when he was made Acting Traffic Manager. In April of the next year he was appointed Chief Engineer of the Way & Works Department, and later in a similar capacity on the B.A.G.S.R. In 1933, on the administrative unification of the two railways, Mr. Creswell was confirmed as Chief of the Engineering Department of both systems.

Mr. F. L. Creswell

Chief of the Engineering Department, B.A.G.S.R. and B.A.W.R., 1933-45

Brigadier J. C. B. Wakeford

Appointed Chief Railway Commissioner, Burma

Brigadier John Chrysostom Barnabas Wakeford, A.M.I.Mech.E., M.Inst.T., who, as recorded in our August 17 issue, has taken over from Sir John Rowland as Chief Railway Commissioner, Burma, was born on August 23, 1898, and was educated at Malvern College, where he was a Minor Classical Scholar from 1912-15. In 1916 he proceeded to the Royal Military Academy, and he was commissioned as a 2nd Lieutenant in the Royal Engineers on February 28, 1917. After service in France and Belgium in field companies, he proceeded with a field company to North Russia in the 1919 campaign, for which service he was mentioned in dispatches. On return to England, he was selected for three years' training in railway traffic and construction work with the old L.N.W.R., and he spent the years 1920-22 with that company principally in the Crewe and North Wales districts, and at Euston. In 1922-23 he was at Clare College, Cambridge, under a scheme for university engineering training for Royal Engineer regular officers who had entered the Army during the war; and from there he went to the Railway Sub-Commission in Cologne, until 1927. He commanded the 10th Railway Company, R.E., at Longmoor from 1927 until 1930, and had much to do with the earlier training arrangements of the Supplementary Reserve Transportation units, which were then comparatively in their infancy. After a period as Adjutant of the 46th North Midland Division Engineers at Smethwick from 1930 to 1934, Brigadier Wakeford went to Malaya and was the Garrison Engineer responsible for the civil-engineering works in connection with the building of the fixed defences of the eastern entrance to the Johore Straits, which works included the first land-mounted 15-in. battery to be built anywhere in British possessions. Returning to England in 1938 he joined the L.M.S.R. for a year's refresher training in recent developments of railway operating; later in the same year he became Instructor, Mechanical & Railway Traffic, at the Railway Training Centre at Longmoor. On the outbreak of war he became Chief Instructor there, and until December 31, 1940, was responsible for the entire technical training of the large number of Transportation recruits which proceeded through the depot. For a short time early in 1941 he was commanding No. 2 Railway Operating Group, and then was on service in the northern half of England. He proceeded to West Africa in May, 1941, to organise a Transportation staff and services in British West Africa, and to assist with Transportation work in the French Equatorial and Belgian Congo. Returning to England early in 1943, he had a short tour of duty as A.D.Tn. Combined Operations, and again went overseas, in September, as D.D.Tn. Ceylon, from which he was transferred and promoted as D.Tn. 11th Army Group and later as D.Tn. Allied Land Forces, South East Asia, in April, 1944. In the last-named appointment Brigadier Wakeford was largely responsible for the planning and subsequent performance of all transportation facilities in the recapture of Burma in 1944 and 1945, as well as for planning and arrangements for other and subsequent operations.

Mr. John Edmund Sandham, B.Sc. (Eng.) (London), M.Inst.C.E., Maintenance Engineer, Way & Works, Buenos Ayres Great Southern and Buenos Ayres Western Railways, who, as recorded in our August 17 issue, has been appointed Chief of the Way & Works Department of those railways, was born in London in 1900 and received his technical education at University College and the Battersea Polytechnic Engineering College. In 1921 he joined the Buenos

Mr. J. E. Sandham

Appointed Chief of Way & Works Department, B.A.G.S.R. and B.A.W.R.

Ayres Great Southern Railway as an Assistant Engineer, and for five years was engaged in a heavy new-works programme in the vicinity of Buenos Aires, which included the quadrupling of the main lines and construction of a terminal station at Plaza Constitución, Buenos Aires. He was appointed Sectional Engineer in 1925 and Assistant Maintenance Engineer for duty at headquarters in 1927. From 1930 to 1933 his services were lent to the Bahia Blanca Water Works Co. Ltd., and he then was recalled to the headquarters of the Way & Works Department, B.A.G.S.R., to take up an appointment as Inspecting Engineer. In 1937 Mr. Sandham was appointed Maintenance Engineer for the Way & Works Department of both the B.A.G.S.R. and B.A.W.R., the administrations of which had been amalgamated in 1933. He is the Convener of the Chief Engineers' Standardisation Committee of British-Argentine Railways.

General Juan Pistarini has been appointed Vice-President and Minister of Public Works in the Argentine Cabinet formed on October 20.

Mr. B. W. Palmer has severed his connection with G. D. Peters & Co. Ltd., of Slough, and is proceeding to India shortly to take charge of the interests of George Spencer Moulton & Co. (India) Ltd. and the A.B.C. Coupler & Engineering Co. (India) Ltd.

WESTERN AUSTRALIAN GOVERNMENT RAILWAYS

Mr. W. Muir, District Locomotive Superintendent, Narrogin, has been appointed Superintendent of Locomotive Running, in succession to Mr. J. Flaherty, who has retired.

Mr. E. Summerville, District Locomotive Superintendent, Geraldton, has been appointed District Locomotive Superintendent, East Perth, in succession to Mr. S. H. C. Loftus, who has retired.

Mr. J. A. S. Giles, District Locomotive Superintendent, Bunbury, has been appointed District Locomotive Superintendent, Northam, in succession to Mr. H. L. Melrose, who has retired.

INDIAN RAILWAY STAFF CHANGES

Mr. C. E. Hall has been appointed to officiate as Financial Adviser & Chief Accounts Officer, G.I.P.R.

Mr. A. G. T. Glaisby has been appointed to officiate as Controller of Stores, G.I.P.R.

Mr. J. E. Jack has been appointed to officiate as Deputy General Manager (Works), G.I.P.R.

Brigadier J. E. Clutterbuck has been confirmed permanently as Deputy Chief Engineer, G.I.P.R.

Mr. A. Saldanha has been appointed to officiate as Deputy Chief Engineer (Maintenance), G.I.P.R.

Mr. W. Coltman has been appointed to officiate as Deputy Chief Mechanical Engineer (Locomotive), G.I.P.R.

Mr. B. A. Berry has been confirmed permanently as Chief Engineer, M.S.M.R.

Mr. E. Perfect, Deputy Chief Engineer, M.S.M.R., has been granted one year's leave, preparatory to retirement, as from February 15.

Mr. P. Subramaniam has been appointed to officiate as Deputy Chief Engineer, M.S.M.R.

Mr. P. Morris has been appointed to officiate as Deputy Mechanical Engineer, M.S.M.R.

Mr. Daya Chand, on return from leave, has been appointed to officiate as Deputy Chief Engineer, N.W.R.

Accidents on British Railways, 1944

The annual report* for 1944 of the Ministry of War Transport Chief Inspecting Officer of Railways includes, for the first time, tables showing the incidence of damage and delay and casualties caused by enemy action. Of the 9,239 reported cases (not necessarily confined to single bomb incidents), some 8,000 resulted in damage to property. Casualties totalled 897 passengers, railway servants, and other persons killed, and 4,379 seriously injured. The first incident affecting railways occurred on June 19, 1940, and the last on March 27, 1945. It is stated that study of the statistics and experience at the time of the damage and dislocation involved makes the safety record of the last five years the more remarkable.

The report refers to the exceptional nature and volume of wartime traffic, and to the increase in ordinary passenger travel, as having caused many working difficulties, which were accentuated by fog, heavy snowfalls, widespread frost, and sickness considerably in excess of normal.

Besides transport activities connected with industry, vast movements of men and materials for the Services were involved, both before the landing in France on June 6 and during the subsequent build-up. During 1944 there was an increase in passenger journeys on main-line railways, compared with pre-war, of 85 millions, and passengers were carried some 13,500 million more miles; in other words, on the average, 90 million passenger-miles were worked every 24 hours, an increase of 68 per cent. Freight traffic rose to 70 million ton-miles a day, an increase of 47 per cent.

The report concludes by saying that these unprecedented demands were met with depleted staffs and impaired equipment. The railway record is an eloquent tribute to their efficiency, standard of maintenance, and high factor of safety attained, all of which reflect the greatest credit on railway men and women for the part they played in this historic year.

A summarised table for the past thirty years shows the total casualties resulting from all movement on rail to passengers, railway servants, and other persons, and gives relevant information about traffic carried and staff employed. Figures for 1913 and 1939 are included to cover the previous war period on a comparable basis.

During 1944, only two train accidents resulted in loss of life among passengers. These occurred at Ilford and Gretna. The total of twelve passenger fatalities in these accidents, nine of which occurred at Ilford, is 15 fewer than the annual average for the 5-year period 1940-44, and five fewer than the average for the previous 5-year period. Altogether, 402 train accidents of all kinds were reported, of which 188 were caused by human failure. The total of 51 fatalities among passengers, railway servants, and other persons, compares with 34 in 1943 and 46 in 1942. Among passengers, the liability to casualty in train accidents was one killed in some 150 millions carried, and with regard to railway servants, the passenger and freight train-miles worked were about 20 millions a fatality.

In accidents connected with the movement of railway vehicles, exclusive of train accidents, 119 passengers were killed, as compared with an average of 68 for the period 1935-39. Of this number, 89 occurred in falling from platforms and trains, and when entering or alighting from trains, as compared with the same number in 1943 and the annual average of 53 during 1935-39. It is stated that these accidents were largely due to misadventure or were caused by want of caution on the part of passengers themselves. There were 292 fatalities among railway servants (7 of them women) in movement and non-movement accidents, as compared with 296 (15 women) in 1943, and with the average of 228 for the 5-year period 1935-39. Of the total, 59 were killed while working on the line, 86 while walking or standing on the line on duty, and 47 during shunting operations.

Blackout continued to be a direct or contributory cause of many movement accidents, both to passengers and railway servants, notwithstanding improvements in lighting of trains, platforms, marshalling yards, goods depots, etc. Of the 119 passenger fatalities in movement accidents, 51 occurred after dark, including 27 when attempting to enter or alight from trains, and falling off platforms and being struck by trains.

Of the 209 serious casualties to railway servants during blackout in movement accidents (66 killed, 143 seriously injured), restricted lighting was considered to have contributed to 71 (27 killed, 44 seriously injured). Everything was, in fact, done to increase safety at night, within the limits that war conditions prescribed, and given the labour and materials, it is anticipated that by the winter this hindrance to full efficiency will have been finally eliminated.

* "Accidents which occurred on the Railways of Great Britain during the year 1944." H.M. Stationery Office, 6d.

INSTITUTE OF TRAVEL AGENTS.—A limited company has been formed to acquire the assets and liabilities of the Institute of Travel Agents, carried on at 10, Norfolk Street, London, W.C.2. The subscribers are: R. Dring, Frames Tours Limited, K. P. Hall, C. S. Robinson, A. J. Southam, Thorn & Young Limited, and the Workers' Travel Association Limited. The solicitors are: Messrs. Macdonald & Stacey, London, W.C.2.

KIEV UNDERGROUND RAILWAY.—Preparatory work was begun early this year, and some excavation was completed by early July, in connection with the building of an underground railway in Kiev, the capital of the Ukraine, according to the Soviet press. The main underground railway lines will intersect the city in three directions, connecting the centre with the suburban areas. Several transfer stations are planned at the points of intersection in the centre of the city.

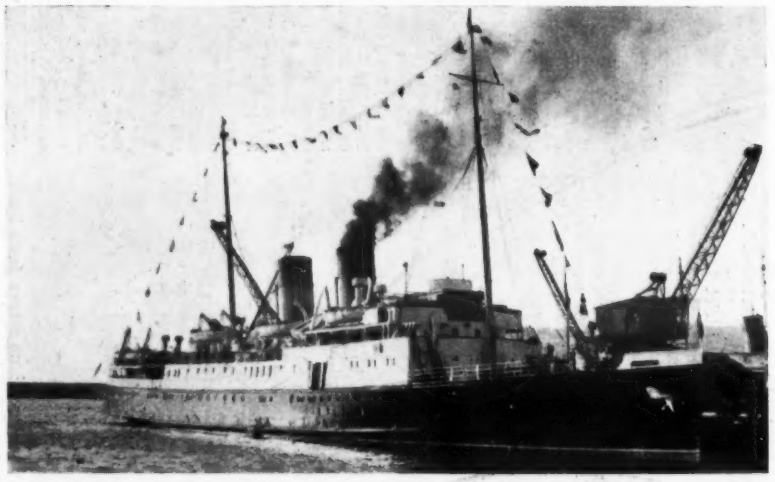
TECHNICAL AND SCIENTIFIC REGISTER.—For the benefit of demobilised men and returned prisoners of war who are scientists, professional engineers, architects or surveyors, the Ministry of Labour & National Service invites attention to the service provided by the appointments department's technical and scientific register at York House, Kingsway, London, W.C.2—telephone Temple Bar 8020. A technical staff, competent to give advice and assistance, has been augmented to meet problems of settlement and reconstruction. A large variety of vacancies, both at home and overseas, is now available for fully-qualified scientists, engineers, etc. Enquirers are asked to write or telephone for appointments, stating occupation, qualifications, and the purpose of the proposed visit so that they will not be kept waiting when they call.

XUM

Re-Opening of Southern and Great Western Railways Channel Islands Joint Service

Colonel Eric Core Browne, D.S.O. (Chairman, S.R.), talking with the Jersey Joint Staff

Lord Portal (Chairman, G.W.R.) greeting members of the joint staff at Guernsey



The ss. "Isle of Jersey" at the re-opening of the S.R. and G.W.R. Joint Channel Islands Service

Mr. K. W. C. Grand, Lord Portal, Sir Eustace Missenden and Colonel Gore Browne, with Captain Golding and officers of the "Isle of Jersey"

Southern Railway Lecture & Debating Society

At the Chapter House, St. Thomas's Street, S.E.1, on October 11, Mr. C. Grasemann, Public Relations & Advertising Officer, gave a talk, with poster illustrations, entitled "Putting the Sun in the Southern," before the Southern Railway Lecture and Debating Society at its first meeting since 1940. Mr. A. E. Hammett, Commercial Superintendent, presided.

Mr. Grasemann illustrated his remarks with 20 Southern Railway posters about sunshine, dealing at length with the great propaganda work undertaken before the war to demonstrate to the public that from records over many years the most hours of sunshine could be obtained in the Southern counties. These Meteorological Office records had proved that of the first 24 towns in the sunshine record list for 1936, no less than 21 were served by the Southern Railway. Various types of posters were exhibited, both pictorial and letterpress, and Mr. Grasemann explained the merits of each and the inspiration which had prompted them. It was, he said, an advantage from time to time to have a poster containing provocative features; people looked hard at it, drew the attention of others to it, and argued about it. From a publicity officer's point of view this was excellent, as the message of the poster thus gained a wider circulation. The good results achieved by passenger travel poster display had been astonishing. This sunshine business had proved an asset to the company which could never be exhausted.

In proposing a vote of thanks to the speaker for his unusual and practical talk, Mr. Hammett said that there was no doubt that Mr. Grasemann had found the art of advertising and he (Mr. Hammett) could say from his own knowledge that there had been a tremendous development in the standard of poster display on the passenger side of the business on the part of the Southern Railway.

Mr. H. W. Bevan, Southern Railway Australian Agent, who is on leave in this country, stated that, conversely, in Australia it was more the case of advertising shade than enticing people to take a place in the sun.

Replacement of L.M.S.R. "Princess Victoria"

The L.M.S.R. motor vessel *Princess Victoria* was the newest and finest of the L.M.S.R. fleet of 66 ships when she went into service on the Larne—Stranraer route in July, 1939, but eleven months afterwards, while on Government Service, she was sunk by a mine. The *Princess Victoria* is to be replaced, and the L.M.S.R. has placed an order for a new ship with Wm. Denny Bros. Ltd., Dumbarton; the vessel is expected to be ready for service by the end of 1946.

Accommodation will be provided for about 1,500 passengers, first and third class, and space will be available on the main deck for about 40 motor vehicles. Hinged doors fitted at the stern will enable vehicles to be driven on or off the vessel at both terminals.

Single- and two-berth cabins will be provided on the boat and main decks and an additional first class lounge is to be arranged on the main deck. All the other public rooms are to be grouped on the promenade deck. Ample toilet accommodation will be provided on all decks, including plunge and shower baths for passengers and crew.

The propelling machinery will consist of two sets of Sulzer seven-cylinder, two-stroke cycle, trunk-piston, diesel engines, built under licence by Wm. Denny Bros. Ltd., the total power developed being 5,100 b.h.p. at about 265 r.p.m. Three 220-volt d.c. electric generators, driven by a four-stroke diesel engine, will be installed immediately forward of the main engines, one set acting as a standby. All engine-room auxiliaries and deck machinery are to be electrically driven, and a thimble tube boiler will provide steam for heating and for all domestic requirements.

A feature in the design of the vessel is the elimination of noise and vibration from the main and auxiliary machinery, and acoustic insulation is to be fitted to the ship sides, bulkheads and deck heads in way of the engine-room.

Welding is being extensively used in the construction of the hull and engine seatings. The ship's dimensions are: length, 305 ft. 6 in.; breadth, 48 ft.; depth, 16 ft. 6 in. The new vessel will have a speed of 19 knots.

Red Cross Penny-A-Week Fund Railway Tour

The exhibition railway coach, lent to the Red Cross Penny-a-Week Fund by the L.M.S.R. and operated without cost to the Fund by the four group railways, completed at Feltham, Middlesex, on September 2, 1945, a tour which began at Manchester on December 9, 1944. In visits to 66 stations, works and docks, the exhibition was seen by 230,000 persons who contributed almost £3,000 to the collecting boxes on the coach. The total attendance was made up as follows:—

Railway	Attendance
L.M.S.R.	67,300
L.N.E.R.	58,100
G.W.R.	59,800
S.R.	44,500
Total ...	£229,700

The inauguration of the tour was undertaken by the L.M.S.R. during the winter of 1944. At the end of that winter the coach began a tour of the L.N.E.R. and Mr. C. Dandridge, on behalf of the Chairman of the London & North Eastern Railway Company, received at Kings Cross Station on March 22 Mrs. Churchill, Chairman of the Red Cross "Aid to Russia" Fund, Lord Iliffe, Chairman of the Duke of Gloucester's Red Cross & St. John Fund, Lord Southwood, Chairman of the Red Cross Penny-a-Week Fund, Maj.-General Sir John Kennedy, Vice-Chairman of the Red Cross & St. John War Organisation Executive, and leading members of the Organisation and the Fund.

Upon the conclusion of the tour of the L.N.E.R., the tour was extended, to the Great Western Railway and was concluded at Paddington on June 25, when Lord Portal, Chairman of the Great Western Railway Company, presided.

The last stage of the tour began on July 2 at Waterloo when Colonel Eric Gore-Browne, Chairman of the Southern Railway Company, received Lord Southwood and a large number of Red Cross & St. John personnel. The tour ended at Feltham (Middlesex) on September 2.

Although the primary purp se of the exhibition coach was to show the public in general and railway employees in particular how their weekly pennies had been used to help prisoners of war, and the sick and wounded, visitors to the coach contributed nearly £3,000 to the collecting boxes during the exhibition. On the L.M.S.R., £862 8s. 10d. was contributed, on the L.N.E.R., £754 14s. 9d., on the G.W.R., £711 8s. 11d., and on the S.R., £654 15s. 6d.

Although at the outset of the tour railway workers' contribution to the Penny-a-Week Fund was already the largest of any single industrial group, the visits of the coach stimulated still further generosity. At the end of the tour the following amounts had been reached:—

	£
L.M.S.R.	183,332
L.N.E.R.	173,655
G.W.R.	68,208
S.R.	56,655
	£481,850

With the last contributions still to be received, the final total should be nearly £500,000—a fine proportion of the total of £17½ million in pennies contributed.

L.M.S.R. Train Service Alterations

Important alterations of train service are announced by the L.M.S.R. to operate from November 1 onwards. The 10 a.m. express from Euston to Glasgow Central and the 10 a.m. from Glasgow Central to Euston will cease to call for passenger purposes at Carlisle. The southbound train will thus have no public stop between Motherwell and London, and is to arrive at 6.56 p.m., 6 min. later. It is to be preceded by an express due in Euston at 6.49 p.m., which will convey through coaches from Stranraer; and to make the necessary connection at Carlisle the 8.30 a.m. from Stranraer to Dumfries will start at 8 a.m., and reach Carlisle at 11.40 a.m. The 8.40 a.m. from Perth will reach Euston at 7.17 p.m., 7 min. later. In the northbound direction the advance portion of the 10.5 a.m. express from Euston to Perth, which hitherto has been run to Thurso for Service purposes only, will be open to the public as far as Perth; leaving Carlisle at 4.45 p.m., this train stops only at Stirling, and is due in Perth at 8.30 p.m., an acceleration of 16 min. The previous ordinary train will leave Carlisle at 5.2 instead of 4.52 p.m., make the usual stops, and reach Perth at 9.3 p.m. The 10.5 a.m. from Euston is to carry through coaches for Stranraer, and to work these forward from Carlisle, the 4.57 p.m. from Carlisle to Glasgow *via* Dumfries is to be diverted to Stranraer, forming the 5.55 p.m. from Dumfries, and reaching Stranraer at 8.36 p.m. A connecting train will leave Dumfries at 6.10 p.m. for most stations to Glasgow St. Enoch, running 10 min. later than the discontinued 6 p.m. train. The 10 a.m. from Manchester, London Road, to Euston *via* Stoke is retarded to arrive at 2.35 p.m., 25 min. later, and the 8.25 a.m. Heysham boat express to reach London at 2.50 p.m., 18 min. later. New trains in the London area are to be run at 8.5 p.m. from Euston to Watford and stations to Tring, and at 7.10 a.m. from Bedford to Luton, Harpenden, and St. Pancras, due at 8.26 a.m.

BRITISH RAILWAY OFFICERS' GUILD.—In our October 19 issue Mr. W. H. Mills was described as Principal Assistant to the Secretary of the Railway Clearing House. We are informed that Mr. Mills is Principal Assistant to the Secretary of the Railway Executive Committee and on loan from the Railway Clearing House.

Questions in Parliament

Crieff & Balquhidder Railway

Mr. W. McNair Snadden (Kinross & West Perth—C.) on October 15 asked the Minister of War Transport, why it was intended to close the branch railway between Crieff and Balquhidder, Perthshire .

Mr. Alfred Barnes stated in a written answer: No decision has been taken to close this branch line, but I understand that the L.M.S.R. has the matter under consideration.

Transport to Channel Islands

Sir John Jarvis (Guildford—C.) on October 15 asked the Minister of War Transport whether he was aware of the inadequate travel facilities between this country and the Channel Islands; and what prospect there was of an improvement in the services before the winter.

Mr. Alfred Barnes wrote in reply: Yes, Sir, the inadequacy has been due to lack of ships, but I am glad to say that a second vessel, which had just been reconditioned after release from war service and carries 1,000 passengers, was placed on the service on October 9.

Sleeping Facilities in Trains

Lt.-Colonel Sir Thomas Moore (Ayr Burghs—C.) on October 15 asked the Minister of War Transport what priorities were still observed in regard to sleepers.

Sir Waldron Smithers (Orpington—C.) asked the Minister of War Transport if, now that the war was over, he would cancel immediately the priority for Government officials booking sleeping berths in railway trains.

Mr. Alfred Barnes: Since September 17 about 50 per cent. of all first class and 75 per cent. of all third class sleeping berths on trains have been available for booking by the public through the railway companies. The percentage varies on the different routes. The remainder is reserved for allocation to Members of Parliament travelling between London and their constituencies or elsewhere on the business of the House, and to persons travelling on urgent business of national importance where the journey must necessarily be made at night and is sponsored by the Government department concerned. Only a small proportion of the priority berths is in fact allocated to Government officials.

Sir T. Moore: Why should there be any such priorities now—that is, barring present company, of course—since they must be at the expense of the ordinary citizen, and surely at this time the ordinary citizen should have some of his rights restored to him?

Mr. Barnes: I would like to remind Sir Thomas Moore that the facilities afforded to the general travelling public have been considerably increased, and when the matter of priorities is being considered by this House the House must bear in mind its own position with regard to facilities for its own members.

Sir Waldron Smithers (Orpington—C.): Why should there be any priority at all? Is the Minister aware that business men engaged on vital and important business necessary to this country cannot keep their business appointments? Why should not Government officials be treated like ordinary mortals?

Mr. Barnes: Sir Waldron Smithers probably will be surprised to know that the majority of the priority reservations issued from this Department is for business personnel.

Sir W. Smithers: Business personnel under Government control.

Lt.-Commander Clark Hutchison (Edinburgh West—C.) on October 15 asked the Minister of War Transport whether, in view of the uncertainty which existed on this matter, he could make a full statement showing to what extent first and third class sleeping accommodation had now been made available to members of the public.

Mr. Alfred Barnes (Minister of War Transport) in reply circulated the following statistical table:—

Time	Up Trains	Total berths on train		Berths held by railway for public	
		1st	3rd	1st	3rd
p.m.					
10.15	Edinburgh to St. Pancras	6	12	6	12
9.40	,, Kings Cross (SX)	34	56	10	32
9.40	,, ,, (Sat. only)	24	56	14	34
9.15	Glasgow (St. E.) to St. Pancras	28	28	18	23
9.27	,, (C) to Euston	72	56	32	30
9.30	,, (C) to Euston (SX)	92	112	60	91
9.30	,, (C) to Euston (Sat. only)	70	112	38	91
10.10	,, (C) to Birmingham (Sat. & Sun. X)	6	14	6	14
10.00	,, (C) to Birmingham (Sun. only)	6	14	6	14
11.05	,, (C) to Liverpool	6	14	6	14
11.05	,, (C) to Manchester	6	14	6	14
6.30	Aberdeen to Kings Cross (Sat. & Sun. X)	24	56	18	44
6.30	,, ,, (Sat. only)	12	28	6	20
6.10	,, ,, (Sun. only)	24	56	18	44
4.20	Inverness to Euston (Sun. X)	28	28	22	23
8.20	Perth to Euston (Sun. X)	14	28	10	28
8.55	,, ,, (Sun. only)	14	28	9	22
10.35	Newcastle to Kings Cross (SX)	22	28	10	13
10.35	,, ,, (Sat. only)	12	28	6	17
10.50	Preston to Euston (Sat. & Sun. X)	14	0	9	—
11.20	Stranraer to Euston (Sun. X)	6	42	4	38
10.10	,, ,, (Sun. X)	14	—	6	—
a.m.					
12.02	Liverpool to Euston	14	28	6	21
12.05	Manchester to Euston	14	28	6	23
p.m.					
6.50	Neyland to Paddington (Sun. X)	6	12	2	7
6.20	,, ,, (Sun. only)	6	12	3	7
11.50	Plymouth to Paddington	10	—	5	—
8.00	Penzance to Paddington	20	—	12	—
8.00	Newquay to Paddington (Sun. X)	24	—	12	—
9.00	Truro to Paddington (Sun. only)	24	—	12	—
4.45	Oban to Euston (Mon. only)	6	14	6	14
11.20	Inverness to Glasgow (Mon. to Fri. incl.)	6	14	6	14

(SX = Saturdays excepted ; Sun. X = Sundays excepted)

Time	Down Trains	Total berths on train		Berths held by railway for public	
		1st	3rd	1st	3rd
p.m.					
9.25	Paddington to Neyland (Sat. only)	6	12	6	12
a.m.					
12 55	,, Swansea (SX)	6	12	2	8
p m					
9.50	,, Penzance	10	—	4	—
11.40	,, Plymouth	10	—	4	—
a.m.					
12.15	,, Newquay & Penzance (SX)	34	—	24	—
p.m.					
11.45	,, Truro (Sat. only)	34	—	24	—
7.30	Kings Cross to Aberdeen (SX)	24	56	16	44
7.30	,, ,, (Sat. only)	12	28	4	16
10.10	,, Edinburgh (SX)	34	56	4	36
10.10	,, ,, (Sat. only)	24	56	4	36
9.15	St. Pancras to Edinburgh	6	12	6	12
8.40	Euston to Glasgow	72	56	30	31
9.15	,, ,, (Sun. X)	78	84	44	70
9.15	,, ,, (Sat. only)	56	84	20	70
9.25	,, ,, ...	14	28	14	28
9.20	,, ,, (Sun. only)	78	84	44	70
9.30	St. Pancras to Glasgow	28	28	13	24
11.5	Birmingham to Glasgow	6	14	6	14
a.m.					
12 45	Liverpool to Glasgow	6	14	6	14
p.m.					
7.20	Euston to Inverness (SX)	28	28	20	22
7.30	,, Perth	14	28	11	24
11.15	Kings Cross to Newcastle (SX)	12	28	4	14
11.15	,, ,, (Sat. only)	12	28	8	20
10.10	,, ,, (SX)	10	—	2	—
4.50	Euston to Stranraer (SX)	14	28	6	22
4.55	,, ,, (SX)	6	14	6	14
10.55	,, Preston (Sat. & Sun. X)	14	—	7	—
p.m.					
11.45	,, Liverpool (SX)	14	28	6	22
11.35	,, ,, (Sat. only)	14	28	8	22
a.m.					
12.20	,, Manchester (SX)	14	28	6	24
p.m.					
11.35	,, ,, (Sat. only)	14	28	6	24
7.30	,, Oban (Fri. only)	6	14	6	14
a.m.					
1.10	Manchester (Ex) to Glasgow (Sun. morn X)	6	14	6	14
p.m.					
10.30	Glasgow (Buch. St.) to Inverness (Mon. to Fri. incl.) ...	6	14	6	14
11.15	,, (Cent.) to Inverness (Sun. only)	6	14	6	14

(SX = Saturdays excepted ; Sun. X = Sundays excepted)

Automatic Train Control

Sir P. Hannon (Moseley—C.) asked the Minister of War Transport whether his attention had been called to the safety signal devices introduced on the Great Western Railway with beneficent results in the prevention of accidents; and whether a similar system would be made compulsory on all railways in Great Britain.

Mr. Barnes (Minister of War Transport): I assume Sir Patrick Hannon refers to the automatic train control apparatus which the Great Western Railway has used for many years. The war held up the experiments which the L.M.S.R. and L.N.E.R. were making with another type of equipment for the same purpose. Pending further consideration I should not feel justified in requiring the general adoption of a particular type of automatic train control equipment.

Control Agreement

Sir John Mellor (Sutton Coldfield—C.) asked the Minister of War Transport how long he intended the Railway Control Agreement to continue; what modifications he proposed for the transitional period; and whether the existing rental would be increased so that all stockholders might receive some return from their capital.

Mr. Barnes: Under the Railway Control Agreement, control is to be continued for a minimum period of one year after the cessation of hostilities. Before control comes to an end (that is, before all statutory rights and obligations as they exist at that time again apply to the controlled undertakings) time is to be given for the operation of any statutory machinery governing the level of charges. The agreement, including the financial clauses, covers the whole period of control, both during the war and during the transitional period thereafter. I do not propose to make any modifications in it.

Mr. Ernest Davies (Enfield—Lab.) asked the Minister of War Transport whether he would now state the policy of the Government with regard to the railways on the expiry of the control agreement. Mr. Barnes: I am not yet in a position to make a statement upon the situation which will arise when the present control terminates.

Sir Wavell Wakefield (Marylebone—C.): Can the Minister say whether the phrase "cessation of hostilities" refers to Germany or to Japan?

Mr. Barnes: If it represents a minimum period of one year after the cessation of hostilities, I do not think it really matters much whether it is related to Germany or Japan, although that is a matter into which I shall look more closely.

Mr. Ernest Davies asked whether he would put the moneys accruing to the Exchequer from the operation of the Railway Control Agreement into a separate fund and earmark this for future railway development.

Mr. Barnes: I see no reason to make any special arrangements.

Mr. Ernest Davies asked how much had been expended by his Department on railway works, extensions or improvements on each of the four main railway systems during the operations of the Railway Control Agreement; how much had been charged to the railway companies; and would they be charged with the balance.

Mr. Barnes: The estimated cost of railway works of a capital nature on the four main-line systems and joint lines, financed by my department since the commencement of Government control, is as follows:

L.N.E.R.	£3,815,422
L.M.S.R.	£3,863,428
G.W.R.	£5,374,745
S.R.	£2,229,201
Joint Lines	£228,679
Total	£15,511,475

Pending their ultimate disposal, these works remain the property of the Government.

Railway Executive Committee

Major Sir Basil Neven-Spence (Aberdeen & Kincardine—C.) asked the Minister of War Transport what functions were performed by him, as Chairman, and by the Deputy Chairman of the Railway Executive Committee.

Mr. A. Barnes: The Railway Executive Committee is my agent for the purpose of giving directions under the Railway Control Order and I exercise my powers of control through it. As Chairman I reserve the right to preside at any of the meetings of the Committee, a course which enables me to maintain close personal touch with the members individually and corporately. The Deputy Chairman presides in my absence and is responsible for the day-to-day conduct of the Committee's affairs, consulting me as necessary.

Viscount Hinchingbrooke (Dorset—C.): Does the Minister maintain that his right to give such direction will be kept on indefinitely?

Mr. Barnes: I would not like to use the word "indefinitely," but as to claiming that right, the answer is definitely: "Yes."

Re-Opening of Ostend Service

Southern Railway and Belgian Marine Ceremony

On Monday, October 22, the Southern Railway in conjunction with the Belgian State Railways re-opened the London and Brussels Continental service; the first inward service from Brussels ran *via* Ostend and Folkestone to Victoria. On Tuesday, October 23, the first outward service ran from Victoria to Folkestone and Ostend.

The boat train consists of first, second, and third class coaches and a Pullman car. On Tuesday the train was hauled by the newly-named "Merchant Navy" class locomotive, No. 21C17, *Belgian Marine*.

The service runs three times weekly—from London to Brussels on Tuesdays, Thursdays, and Saturdays—leaving Victoria Station at 8 a.m., and inwards on Mondays, Wednesdays, and Fridays, arriving at Victoria Station at 8.10 p.m. Each coach of the Southern Railway train has roof boards bearing the words "Continental Express—London and Brussels." The steamer service between Ostend and Dover has been operated by the Belgian Government since 1846.

On the evening of Monday last, M. Rongvaux, the Belgian Minister of Communications, accompanied by the Belgian Ambassador Baron de Cartier de Marchienne, the Chairman of the Southern Railway Company, Colonel Gore Browne, D.S.O., and the General Manager, Sir Eustace Missenden, O.B.E., named one of the Southern Railway "Merchant Navy" class locomotives *Belgian Marine*.

In welcoming M. Rongvaux and inviting him to name the engine, Colonel Eric Gore Browne paid tribute to the war effort of Belgium and said how impressed he was during his recent visits to Belgium with that country's determination to hasten its contribution to world recovery.

He recalled with pride how the fleet of the Belgian Marine sailed from Ostend to Great Britain and served with distinction in the Allied cause. He looked forward to the day when the House Flag of the Belgian marine would be seen in ever increasing numbers crossing the Channel and hoped that the cross-Channel service would go from strength to strength.

M. Rongvaux expressed the pleasure it gave him to attend the ceremony which was significant of the restoration of business relations between the two countries. He looked forward to the day when the interests of the Belgian Marine and the Southern Railway would be further consolidated and was pleased that this function coincided with the recommencement of the Dover-Ostend service.

In the evening Colonel Gore Browne gave a dinner at the May Fair Hotel to M. Rongvaux, and other guests.

The following were among those present:—

Belgian Ministry
MM. Rongvaux (Ministre des Communications); Ros (Chef de Cabinet); Claeys (Secretaire General); Malderez (Administrateur Delegue de L'I.N.R.); Mallebrancke (Chef de Cabinet adjoint); Lahon (Attache de Cabinet).

Belgian National Railways
MM. Henning (Directeur General); Antoine (Directeur du Service Commercial); Colle (Director du Service de L'Exploitation); De Groote (Administrateur a la Societe, Nationale des Chemins de fer Belges).

Marine
MM. de Vos (Directeur General); Ct. Goor (Directeur), Degreze (Secretaire Provincial du syndicat des transports d'Ostende).

Press
MM. Williot and Herreman (Representant de la Presse Belge).

S.R. Agent, Brussels
M. H. V. Boonen (Acting S.R. Agent).

Belgian Railways & Marine
Mr. A. Mertz.

Belgian Embassy, London
His Excellency le Baron de Cartier de Marchienne (Belgian Ambassador to the Court of St. James); M. Walravens (Councillor); M. de Clercq (Commercial Councillor).

Ministry of War Transport
Sir Reginald Hill (Deputy Director General); Mr. P. Faulkner (Assistant Secretary, Railways Division).

Home Office
Mr. W. R. Perks (Aliens Department).

Southern Railway
Colonel Eric Gore Browne, D.S.O. (Chairman); Rt. Hon. The Earl of Radnor (Deputy Chairman); Hon. Clive Pearson (Director); Sir Eustace Missenden, O.B.E. (General Manager); Messrs. R. M. T. Richards, O.B.E. (Traffic Manager); O. V. Bulleid (Chief Mechanical Engineer); R. P. Biddle, C.B.E. (Docks & Marine Manager); C. Grasemann (Public Relations & Advertising Officer); S. W. Smart (Superintendent of Operation); R. H. Hacker (Continental Superintendent); T. E. Chrimes (Superintendent of Motive Power); E. F. E. Livesey, O.B.E. (Development Officer, T.M.O.); J. L. Harrington (General Assistant to General Manager); P. Nunn (London East Divisional Superintendent); J. Bridger (Acting Divisional Superintendent, Redhill); K. R. Ellson (Public Relations Assistant); H. L. Steward (Acting Divisional Marine Manager, Dover); H. J. Bourn and S. J. Grant (Continental Department, Victoria); T. A. Chapman (Stationmaster, Victoria); J. P. Maitland (Motive Power Shed Superintendent); Driver J. Peck and Fireman J. Bird (Top Link Enginemen); Messrs. F. Clayton (Fitter, Eastleigh Works); C. W. Anglestein (Fitter's Assistant, Eastleigh Works).

Press
Messrs. J. Kay, Editor (*The Railway Gazette*); C. F. Klapper (Acting Editor, *Modern Transport*); J. P. Taylor (Editor, *Shipbuilding & Shipping Record*); News Editor *The Times*.

(*See editorial note, page* 409).

Notes and News

Dean & Dawson Limited.—The office at 52, St. Petersgate, Stockport, of Dean & Dawson Limited will re-open on November 5 under the charge of Mr. H. Edwards.

South African Railway Earnings.—For the period September 9 to October 6, earnings of the South African Railways amounted to £4,107,920, compared with £3,570, 980 in the corresponding period of 1944.

Headquarters of Registrar of Companies.—Headquarters of the Registrar of Compsnies are being transferred from Llandudno to London on October 29 and will be at Bush House (south-west wing), Aldwych, W.C.2.

Central Railway of Brazil Electrification.—Reuters reports that the Central of Brazil Railway has concluded negotiations with the Sao Paulo Federal Savings Bank for a loan of 100 million cruzeiros to finance the electrification of its suburban line.

Government Surplus Machine Tools.—The Machine Tool Control announces a special sale of Government surplus machine tools at the Ministry of Supply Store, Royal Ordnance Factory, Burghfield, near Reading, Berks, commencing on Wednesday, October 24. Machines on offer may be inspected on and after that date and the usual facilities for purchasers to obtain the services of the approved merchants will be available.

Sterling Guilder Rate of Exchange.—A monetary agreement signed between the Governments of Great Britain and the Netherlands on September 7 provides that the rate of exchange between the Netherlands guilder and the £ sterling shall be Netherlands guilders 10·691 to the £1. This rate will be the official rate and is not to be varied by either of the Contracting Governments except after mutual consultation.

Peruvian Corporation Limited.—For the year to June 30, 1945, the profit on revenue account of the Peruvian Corporation Limited was £359,074, compared with £328,087 for the previous year. The Corporation will, on November 1, pay to its debenture holders 3 per cent. on account of interest, and this payment will be made in full discharge of Coupon No. 100, representing the instalment of interest due April 1, 1940.

New L.M.S.R. Coaches in Traffic.—The first 100 of the 800 new L.M.S.R. coaches—production of which began five days after VE-Day—have now been passed into traffic. The 100th coach came off the production lines on October 13. The balance of 700 is being built as quickly as the supply of labour and materials will allow, and when the full order is completed, 33,000 more seats will be available for L.M.S.R. passengers. The coaches were described and illustrated in our September 7 issue.

Ottoman Railway Holding Co. Ltd.—During the year to June 30, 1945, a full year's interest on its holding of £707,950 Turkish 7½ per cent. 1935 bonds, or £53,906 gross, was received by the Ottoman Railway Holding Co. Ltd. The position with regard to assets of the Ottoman Railway (Smyrna to Aidin) in Turkey remains the same and no remittances were effected during the year. Accordingly no funds became available from this source for redemption of the 3 per cent. "A" income debenture stock. Income from other investments was £4,055 and the amount recoverable in respect of income tax and provision for E.P.T. written back was £2,961. After providing for management expenses, taxation, and interest on advances the net profit was £29,196. Interest at 3 per cent., less tax, on the outstanding "A" and "B" stocks required £20,198, leaving £8,997 available for redemption of those stocks. During the year £26,675 of "B" stock was redeemed. "A" stock now outstanding is £66,911, and "B" stock £1,272,616.

Serck Radiators Limited.—The profit of Serck Radiators Limited for the year to August 4, 1945, amounted to £59,597 (£56,852). Appropriations include £5,000 (£15,000) to contingencies, and £25,000 (£15,000) to general reserve. The first and final dividend is 15 per cent. (3s. on each £1 of stock) and there is a cash bonus of 10 per cent. (2s. on each £1 of stock). Both these distributions are the same as in the previous year. The amount carried forward is £18,465, compared with £13,868 brought in.

Ruston & Hornsby Drops Agricultural Machinery.—Ruston & Hornsby Limited is disposing of the greater part of its holding of the ordinary capital of Ransomes Sims & Jefferies Limited, the agricultural and general engineers of Ipswich. The reason for this action is said to be that Ruston & Hornsby may have larger resources available for the production of oil engines, and other engineering work on which it has chiefly concentrated of recent years rather than on agricultural machinery.

Benguela Railway.—We are informed that the figures of results of the Benguela Railway for the first six months of 1935, which were published on page 354 of our issue for October 5, were incorrectly stated. These were for June, 1945, only. The amended figures given below are for the first six months of 1945:—Passengers carried in 1945 were 280,423, compared with 224,076 in the corresponding period of 1944, and the tonnage of goods was 362,571, against 225,369. Gross railway receipts for the first half of 1945 amounted to £236,244, compared with £225,906 for the first six months of 1944, and net railway receipts improved from £73,230 to £85,790.

Iron and Steel Production.—The following figures, issued by the Ministry of Supply, show pig-iron and steel-ingot production for September, 1945, compared with the output for July and August, 1945, and the production for the first half of the year:—

	Pig iron		Steel ingots and castings	
	Weekly average	Annual rate	Weekly average	Annual rate
1st half, 1945	133,900	6,963,000	231,600	12,043,000
July... ...	134,800	7,010,000	213,800	11,118,000
August ...	125,200	6,512,000	186,100	9,676,000
September	139,500	7,255,000	240,700	12,517,000

Precision Instrument Manufacturers' Sales Drive.—Three British manufacturers of precision and optical instruments have agreed to pool their technical, manufacturing and distribution resources with a view to development in both the home and export markets. The companies concerned are the Coventry Gauge and Tool Co. Ltd., Taylor, Taylor & Hobson Limited, and E. R. Watts & Son Ltd. The products of these concerns cover a wide range of instruments for engineering workshops, inspection departments, and standards rooms. Many new instruments are in the course of development, and a wide range of equipment will be available shortly for demonstration at the companies works and showrooms in Coventry, Leicester and London. The above companies are among the founder members of the British Engineers' Small Tools & Equipment Co. Ltd. (Bestec), the recently-formed organisation for precision engineering exports.

Beyer-Garratt Locomotives for Ceylon.—In the table of dimensions of the new Beyer-Garratt locomotives for the Ceylon Government Railway, published in last

British and Irish Railway Stocks and Shares

Stocks	Highest 1944	Lowest 1944	Prices Oct. 23, 1945	Prices Rise/Fall
G.W.R.				
Cons. Ord.	62¾	55	55	—
5% Con. Pref. ...	122½	114¾	109½	+ 1
5% Red. Pref. (1950)	110½	104	103	—
5% Rt. Charge ...	135½	128	124	—
5% Cons. Guar. ...	134-7/8	125	122½	—
4% Deb.	118½	112¾	111	+ 1
4½% Deb.	118-3/8	114	111½	+ 1
4½% Deb.	124⅛	119¼	116	+ 1
5% Deb.	137	129½	128	+ 1
2½% Deb.	77	73⅛	80¼	—
L.M.S.R.				
Ord.	34⅜	27⅞	27¾	—
4% Pref. (1923) ...	64⅛	55	58	+ ½
4% Pref.	81	72½	76	+ ½
5% Red. Pref. (1955)	105⅞	102	101½	—
4% Guar.	107½	99½	101½	+ ½
4% Deb.	111½	104	106½	+ ½
5% Red. Deb. (1952)	111	108	105½xd	—
L.N.E.R.				
5% Pref. Ord. ...	10½	7-7/16	6⅜	+ ⅛
Def. Ord.	5-5/16	3⅜	3½	—
4% First Pref. ...	68⅛	55½	57	+ ½
4% Second Pref. ...	35⅜	28½	29	+ ½
5% Red. Pref. (1955)	101	97½	98	—
4% First Guar. ...	101½	96⅜	99	+ 1
4% Second Guar. ...	95½	88½	92	+ ½
3% Deb.	88⅛	80⅜	88	+ 1
4% Deb.	110½	103½	105	+ ½
5% Red. Deb. (1947)	105⅜	101½	101	—
4½% Sinking Fund Red. Deb.	107	104½	104½	—
SOUTHERN				
Pref. Ord.	80½	71⅛	73	—
Def. Ord.	26⅜	23	24	—
5% Pref.	122	113½	108½	+ 1
5% Red. Pref. (1964)	117½	112½	110½	—
5% Guar. Pref. ...	134	125½	122½	+ 1
5% Red. Guar. Pref. (1957)	115⅜	112½	109	+ 1
4% Deb.	118	110	111	+ 2
5% Deb.	135½	127	127	+ 1
4% Red. Deb. (1962-67)	111½	107½	107½	—
4% Red. Deb. (1970-80)	112	108¾	108½	—
FORTH BRIDGE				
4% Deb.	107	103	104	—
4% Guar.	106½	102	103	—
L.P.T.B.				
4½ "A"	125	119	119½	—
5% "A"	133½	128	129½	—
3% Guar. (1967-72)	99½	98	99	—
5% "B"	124½	118-3/16	119½	—
"C"	72¾	64½	65	+ 3
MERSEY				
Ord.	35⅜	33	32	—
3% Perp. Pref. ...	72	66	69	—
4% Perp. Deb. ...	105	103	104	—
3% Perp. Deb. ...	85½	79½	80	—
IRELAND*				
BELFAST & C.D.				
Ord.	9	6	7½	+ ½
G. NORTHERN				
Ord.	33⅞	19	33⅞	—
Pref.	49	37	49½	+ ½
Guar.	70	57-5/16	77	+ 1
Deb.	90½	81½	95	+ 1½
IRISH TRANSPORT				
Common	—	—	78	— ½
3% Deb.	—	—	100½	— ½

* Latest available quotation

OFFICIAL NOTICES

None of the vacancies on this page relates to a man between the ages of 18 and 50 inclusive unless he is excepted from the provisions of the Control of Engagement Order, 1945, or the vacancy is for employment excepted from the provisions of that Order.

OFFICIAL ADVERTISEMENTS intended for insertion on this page should be sent in as early in the week as possible. The latest time for receiving official advertisements for this page for the current week's issue is 9.30 a.m. on the preceding Monday. All advertisements should be addressed to:—*The Railway Gazette*, 33, Tothill Street, Westminster, London, S.W.1.

ENGINEER (Mechanical and Electrical), Railway trained and with Colonial railway experience, is opening London Office, and desires to represent, on agency basis, an enterprising manufacturer of Locomotive, Carriage and Wagon and similar products.—Write Box 1910, c/o *The Railway Gazette*, 33, Tothill Street, Westminster, London, S.W.1.

ENGINEERS AND DRAUGHTSMEN, becoming available for civil employment under Class "A" demobilisation, are invited to apply for positions in the Control Gear Department of a large Electrical Engineering Manufacturer in the North East Midlands.—Applications stating age, experience, technical qualifications and salary required to Box 2210, c/o *The Railway Gazette*, 33, Tothill Street, Westminster, London, S.W.1.

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week's issue, the rigid wheel base was given as 63 ft. 5 in. This is the total wheel base. The rigid wheel base of each unit is 9 ft. 10 in. The fuel capacity is 7 tons; the total water capacity is 4,000 gal.

Associated Locomotive Equipment Limited.—The Associated Locomotive Equipment Limited, of Worcester Engineering Works, Shrub Hill, Worcester, has re-opened its London offices at 81, Piccadilly, W.1.

Central Railway of Brazil Electrification.—The electrification of the section of the Bangu branch line between Santissimo and Campo Grande, on the Central Railway of Brazil, was completed, and the section opened for traffic, on June 3.

Engineers and Draughtsmen Wanted.—Engineers and draughtsmen becoming available for civil employment under Class "A" demobilisation are invited to apply for positions in the control gear department of a large electrical engineering manufacturer in the North East Midlands. See Official Notices above.

Re-Opening of the Hythe Branch, S.R.—Among the improvements introduced on the Southern Railway on October 1 was the restoration of train services on the branch from Sandling Junction to Hythe, which had been closed to all traffic since May 3, 1943. At present the service is limited to two trains in each direction on weekdays only, with an additional train on Saturdays. The morning train from Hythe runs through to Ashford to connect with a business express to London. Similarly, one down train on Saturdays starts from Ashford. The remaining services in each direction connect with the main-line trains at Sandling Junction.

Tecnomasio Italiano Brown Boveri.—The Tecnomasio Italiano Brown Boveri (Italian Brown Boveri Company) of Milan, which supplies electric locomotives to the Italian railways, is a subsidiary of the Swiss Brown Boveri Company of Baden. The results for 1944 show a loss of 2,100,000 lire, against a loss of 79,091 lire only for 1943. The share capital of the firm is 72,000,000 lire, and no dividend was paid for 1944 or 1943. In 1944 the Government in Northern Italy ordered the transfer of the locomotive shops from Vado Ligure (on the Genoa-Ventimiglia line) to Milan. The value of the company's plant amounted to 29,700,000 lire at the end of 1944 against 31,300,000 lire at the end of 1943.

S.R. "Merchant Navy" Class Engine "Bibby Line."—The naming ceremony of the Southern Railway "Merchant Navy" class engine *Bibby Line* took place at Waterloo Station on October 18, and was performed by Mr. A. Harold Bibby, D.S.O., Chairman, Bibby Line Limited. Among those present was Mr. Maurice Magill, Director of Alexander Howden & Co. Ltd., together with the Chairman of the Southern Railway Company, Colonel Eric Gore Browne, D.S.O., and the General Manager, Sir Eustace Missenden, O.B.E. The engine is the tenth of a further series of mixed-traffic streamline locomotives of the "Merchant Navy" class, which is being built to the designs of the company's Chief Mechanical Engineer, Mr. O. V. Bulleid.

Not According to Plan.—The London Section of the Permanent Way Institution resumed its meetings after the summer recess on Saturday, October 20, at the Junior Institution of Engineers, with a lecture by Mr. B. P. Fletcher, M.B.E., M.Inst.C.E., District Engineer, Stratford, L.N.E.R., entitled "Not According to Plan." Mr. Fletcher quoted several instances of unexpected difficulties, which had arisen in the course of his wide experience as a railway engineer, and the ways in which they had been overcome successfully. The subject embraced both new works and maintenance, and included examples of difficulty in securing good foundations, bridge failures, damage to concrete structures, inaccurate plans, and faulty workmanship. The lecture was followed by a discussion, in which other cases of unusual difficulties were recalled; and the meeting closed with a hearty vote of thanks to Mr. Fletcher.

The Railways of French West Africa.—The transport system of West Africa has continued to function, despite major obstacles. Only 460 Europeans were employed by the railways in 1944, compared with 600 in 1942. Of the 323 locomotives owned by the railways, 50 could not be repaired then, and of the remainder an average of one-third was out of use while being repaired. The receipt of 14 powerful new American locomotives helped to ameliorate the situation. The various railway lines in the Federation pooled their equipment and parts and made exchanges, thus minimising the strain on individual lines. Passenger-km. and ton-km. of goods carried during 1944 were respectively 8 and 20 per cent. larger than in 1943. Receipts increased 35 per cent., but expenses increased 50 per cent. As repair work has been postponed whenever possible, a considerable amount of repair and replacement will be required in the immediate post-war period.

Ransome & Marles Bearing Co. Ltd.—In the statement issued with the report and accounts of Ransome & Marles Bearing Co. Ltd. by the Chairman (Sir Albert Bennett, Bt.), it is pointed out that the demands made for bearings during the war differed from the usual peace-time types and sizes, and adjustments had to be made to get the plant back to the correct balance for peace-time markets. The orders already placed were considerable, and there was every prospect that the company's capacity would be fully employed, but for a considerable period of this year transition difficulties would be experienced. The company was doing everything possible for exports, not only by direct exports but by supplying makers of vehicles and machines who were producing for export. The company had its representatives and stocks in all the Dominions and other important markets, and was strengthening and extending the service it could render in this way. As to the work of all the staff and employees throughout the war period he felt that appreciation of their part in the national effort should be recorded.

L.M.S.R. New Third-Class Coaches.—Armchair comfort, with design and fittings up to modern hotel standards, are planned for the third-class railway traveller in passenger coaches now being constructed by the L.M.S.R. at Derby for long-distance trains. Physical comfort, restful design, and attractive and delicate colours, ease of movement, and the elimination of many causes of travel fatigue, have been the aims in designing these vehicles. The new coach will be of the corridor type, normally seating six passengers in each compartment. The coaches will be lighted by a central roof light with individual lights with opal glass shades above each seat. All metal fittings are to be finished in oxidised venetian bronze. A draught prevention device is to be fitted in each compartment. Modern steam heating is provided in the new coach, controlled by thermostat.

The Channel Islands Service.—The Southern Railway steamer *Isle of Jersey* was returned to the joint Southern and G.W.R. Channel Island service on October 9. On the first run, the S.S. *Isle of Jersey* carried the Chairman of the Southern Railway Company, Colonel Eric Gore Browne; Lord Portal, Chairman of the Great Western Railway Company; Sir Eustace Missenden, General Manager of the Southern Railway; Mr. K. W. C. Grand, Assistant General Manager, G.W.R., who is also Chairman of Channel Islands Airways Limited; Mr. John Elliot, Deputy General Manager, Southern Railway, also a Director of Channel Islands Airways Limited, and a number of other G.W.R. and Southern Railway officers. The ship was commanded by Captain H. H. Golding, O.B.E. Complimentary messages were exchanged during the passage with ss. *Hantonia*, which has been running in the Channel Island service for some months. Meetings with the Governor and other important officials and residents of the Islands took place on both Jersey and Guernsey. The speeches indicated that the Islands had retained the basis of their agricultural industry intact and that plans were being put into operation for the Islands to resume their place in the forefront of British holiday resorts. (See illustrations on page 430.)

Forthcoming Meetings

November 2 (*Fri.*).—The Institution of Railway Signal Engineers, at the Institution of Electrical Engineers, Savoy Place, Victoria Embankment, W.C.2. 6 p.m. A discussion, "Running, Jointing and Terminating Railway Signalling Cables," by Mr. A. W. Woodbridge (G.W.R.).

Railway Stock Market

The mainspring of markets has been the reduction in short-term money rates announced by the Government, resulting in a general rise in British Funds, and followed by a downward adjustment of the yield basis of other securities, including industrials,

The interim Budget proposals for the reduction of Excess Profits Tax from 100 per cent. to 60 per cent. will pave the way for higher dividends. In the case of many industrials this is already discounted rather fully, yields on the basis of current dividends being in some instances little higher than the return on gilt-edged stocks.

Home rails have participated in the upward movement in markets, prior-charge stocks, including senior preference issues, responding well to the rise in front-rank investment securities. It is pointed out that home rail prior charges still offer quite attractive yields when their high investment status is borne in mind, and that due regard to the latter would have to be given in any nationalisation developments. The rise in values which has further reduced yields on industrial and other equity shares seems likely to give added attractions to the large yields still obtainable on home railway junior stocks.

The view persists in most quarters that the junior stocks are moderately valued on the basis of fair compensation terms in the event of nationalisation, and it is still being assumed that the latter can hardly be finally decided for at least two years. The statement in Parliament on the duration of the existing control agreement failed to throw fresh light on the position and the Government's intentions. There had been little hope that the agreement would be modified so as to permit some return on L.N.E.R. deferred and preferred stocks, which have remained out of the dividend list throughout the war period.

There is still a disposition from the long term angle to favour preference stocks, particularly L.M.S.R. 1923 preference and L.N.E.R. first preference, because of their stable dividend records over a long period; although it is realised that in the event of sustained activity in home rails, the junior issues, such as L.M.S.R. ordinary and Southern deferred, might have the better scope for capital appreciation.

In respect of the current year, there may, according to some views, be scope for fractional improvement in the dividends on L.M.S.R. ordinary and L.N.E.R. second preference; but this pre-supposes that now the war is over the companies may decide to discontinue the allocations to contingencies reserves. This, however, might not be a prudent course until it is clear whether there will be a period between termination of the existing fixed rental agreement and the bringing into force of new Government plans for transport. London Transport "C" stock has continued to attract attention on the basis of market views mentioned here last week, and the price has risen a further two points.

Compared with a week ago, Great Western ordinary further improved from 54½ to 55; the 5 per cent. preference at 110 gained a point, the guaranteed stock half that amount to 123, and the 4 per cent. debentures were higher again at 111. L.M.S.R. ordinary at 27½ was unchanged on balance, an earlier gain having been lost; but the 1923 preference moved fractionally higher at 58, with the senior preference at 76 holding last week's rise. L.M.S.R. 4 per cent. debentures rose further from 104½ to 106.

L.N.E.R. second preference, after improving, receded slightly to 28⅛, compared with 28¾ a week ago. The first preference, however, strengthened further from 56½ to 57; the 4 per cent. debentures moved up from 105 to 106 and the 3 per cent. debentures from 87 to 88. Southern deferred eased from 24 to 23¾, but the preferred at 73 was maintained on balance, and the 4% per cent. debentures rose to 110½. London Transport "C" was 65½, compared with 63½ a week ago.

Argentine rails were unsettled by the political news from the Republic. Buenos Ayres Great Southern receded from 12 to 11¼, the 5 per cent. preference from 26¾ to 25 and the 4 per cent. debentures declined from 65¼ to 63½. Central Argentine 5 per cent. debentures with a reaction from 67½ to 65 reflected the general trend, also Buenos Ayres & Pacific consolidated debentures at 61½ and Buenos Ayres Western 4 per cent. debentures at 58. Elsewhere San Paulo ordinary has been firm at 55. United of Havana 1906 debentures at 16¾ were unchanged on balance. Canadian Pacifics went back from 20½ to 19 15/16.

Traffic Table and Stock Prices of Overseas and Foreign Railways

	Railways	Miles open	Week ended	Traffic for week: Total this year	Traffic for week: Inc. or dec. compared with 1943/4	No. of Week	Aggregate traffics to date: Totals 1944/5	Aggregate traffics to date: Totals 1943/4	Aggregate traffics to date: Increase or decrease	Shares or Stock	Prices: Highest 1944	Prices: Lowest 1944	Prices: Oct. 23 1945	Yield % (See Notes)
				£	£		£	£	£					
South & Central America	Antofagasta (Chili) & Bolivia	834	14.10.45	27,630	+ 1,260	41	1,225,240	1,167,100	+ 58,140	Ord. Stk.	13½	9½	10¾	Nil
	Argentine North Eastern ...	753	13.10.45	19,400	+ 1,862	15	288,175	265,481	+ 22,694	"	6½	4½	8	Nil
	Bolivar	174	Sept., 1945	4,668	— 570	39	44,105	47,755	— 3,650	6 p.c. Deb.	18¾	7½	8½	Nil
	Brazil	—	—	—	—	—	—	—	—	Bonds	19 1/16	15	24½	Nil
	Buenos Ayres & Pacific ...	2,771	13.10.45	130,937	+ 4,063	15	1,860,875	1,789,750	+ 71,125	Ord. Stk.	7 11/16	3½	5½	Nil
	Buenos Ayres Great Southern	5,080	13.10.45	168,562	+ 6,438	15	2,909,625	2,559,061	+ 350,564	Ord. Stk.	14⅝	9½	11½	Nil
	Buenos Ayres Western ...	1,924	13.10.45	70,000	— 4,437	15	1,054,875	986,312	+ 68,563	"	13⅜	9½	10¾	Nil
	Central Argentine	3,700	13.10.45	193,218	+ 26,478	15	2,868 224	2,693,612	+ 174,612	"	10½	6¾	8	Nil
	Do.	—	—	—	—	—	—	—	—	Dfd.	4¾	3	4	Nil
	Cent. Uruguay of M. Video	1,945	13.10.45	30,983	+ 4,443	15	3,866,283	3,522,344	+ 44,958	Ord. Stk.	5½	4	6½	Nil
	Costa Rica	262	Aug., 1945	32,060	+ 7,067	13	63,153	53,315	+ 9,838	Stk.	17½	14½	15	Nil
	Dorada	70	Sept., 1945	29,800	— 50	39	273,135	237,415	+ 35,720	1 Mt. Deb.	101	101	101½	£5 18/3
	Entre Rios	808	13.10.45	26,269	+ 1,143	15	393,487	356,681	+ 36,806	Ord. Stk.	6½	4½	7	Nil
	Great Western of Brazil ...	1,030	13.10.45	27,200	+ 5,200	41	995,900	868,700	+ 127,200	Ord. Stk.	38/-	23/3	26/6	Nil
	International of Cl. Amer. ...	794	Aug., 1945	$719,411	+ $190,507	34	$6,251,918	+ $5,306,660	+ $945,258	—	—	—	—	—
	Interoceanic of Mexico ...	—	—	—	—	—	—	—	—	1st Pref.	1¾	¼	1	Nil
	La Guaira & Caracas... ...	22¾	Sept., 1945	6,742	— 294	39	56,245	71,331	— 15,086	5 p.c. Deb.	88	79	76½	7/65d
	Leopoldina	1,918	13.10.45	64,385	+ 16,885	15	2,149,620	1,921,221	+ 228,399	Ord. Stk.	5⅞	4½	4	Nil
	Mexican	483	14.10.45	ps 593,000	+ ps. 72,400	15	ps. 9,686,200	ps. 7,466,500	+ ps. 2,219,700	Ord. Stk.	¾	⅛	1¾	Nil
	Midland Uruguay	319	Sept., 1945	18,431	+ 2,169	13	55,363	51,326	+ 4,037	—	—	—	—	—
	Nitrate	382	15.10.45	8,408	+ 2,967	41	146,086	141,342	+ 4,744	Ord. Sh.	75/10	65/10	75/-	£3 11
	North Western of Uruguay	113	Au ,, 1945	4,975	— 2,430	8	11,067	13,050	— 1,992	—	—	—	—	—
	Paraguay Central	274	12.10.45	£61,659	+ £1,195	15	£919,132	£873,026	+ £46,106	Pr. Li.Stk.	79½	68	77½	£7 14/1
	Peruvian Corporation ...	1,059	Sept., 1945	139,630	+ 9,703	13	422,833	375,652	+ 47,181	Pref.	9	10	9½	Nil
	Salvador	100	Aug., 1945	c 94,000	+ c 7,000	8	c 189,000	c 175,000	+ c 14,000	—	—	—	—	—
	San Paulo	153½	—	—	—	—	—	—	—	Ord. Stk.	57¾	46	55	£5 4/4
	Taltal	156	Sept., 1945	2,465	— 240	13	6,665	8,240	— 1,575	Ord. Sh.	21/3	13/9	18/3	Nil
	United of Havana	1,945	14.10.45	36,404	— 4,799	15	646,134	736,722	— 90,588	Ord. Stk.	4	2½	1¾	Nil
	Uruguay Northern	73	Sept., 1945	1,634	+ 325	13	5,031	4,199	+ 832	—	—	—	—	—
Canada	Canadian National	23,569	Aug., 1945	7,633,600	— 26,400	34	58,376,400	58,072,000	+ 304,400	—	—	—	—	—
	Canadian Pacific	17,030	14.10.45	49,769,000	— 27,800	41	49,769,000	50,017,400	— 248,400	Ord. Stk.	17¾	13 1/16	19 1/16	2½
Various	Barsi Light†	202	Aug., 1945	20,257	+ 1,312	21	127,387	119,310	+ 8,077	Ord. Stk.	129½	97½	127	£3 9/6
	Beira	204	Aug., 1945	76,111	— 9,694	48	846,863	899,876	— 53,013	—	—	—	—	—
	Egyptian Delta	607	20.9.45	3,637	— 287	25	274,247	309,453	— 35,206	Prf. Sh.	7 1/16	5¼	6½	Nil
	Manila	—	—	—	—	—	—	—	—	B. Deb.	63½	58	70	Nil
	Midland of W. Australia ...	277	Aug., 1945	15,703	— 5,172	8	29,469	40,053	— 10,584	Inc. Deb.	101½	99½	96	£4 3/-
	Nigeria	1,900	23.6.45	50,627	— 14,001	12	835,979	777,161	+ 58,818	—	—	—	—	—
	Rhodesia	2,445	Aug., 1945	506,011	— 45,150	48	5,552,569	5,922,969	— 370,400	—	—	—	—	—
	South African	13,301	15.9.45	1,028,460	+ 148,112	24	23,737,132	20,756,674	+ 2,980,458	—	—	—	—	—
	Victoria	4,774	April, 1945	1,285,324	+ 96,325	—	—	—	—	—	—	—	—	—

Note. Yields are based on the approximate current price and are within a fraction of ⅛. Argentine traffics are given in sterling calculated @ 16 pesos to the £

† Receipts are calculated @ 1s. 6d. to the rupee.